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FIFTIETH YEAR

PAPER TRADE JOURNAL

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PAGE 19



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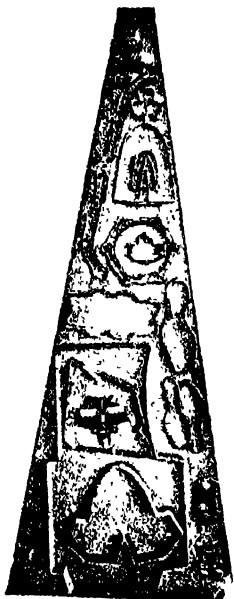
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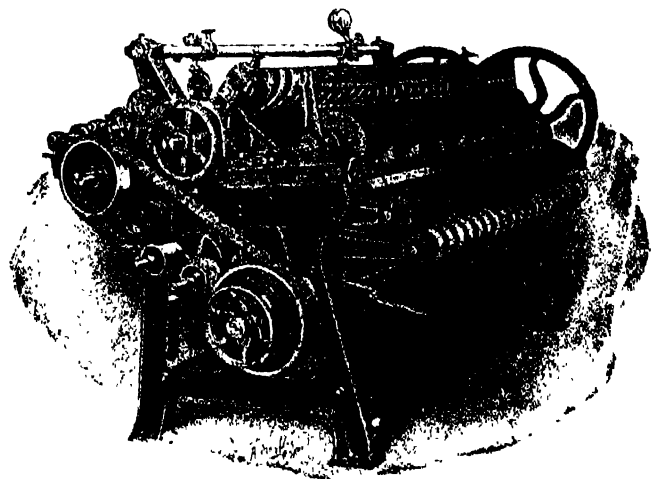
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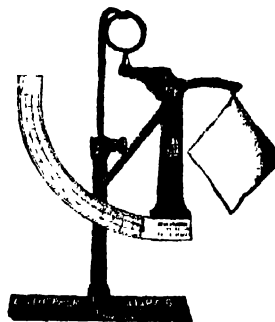
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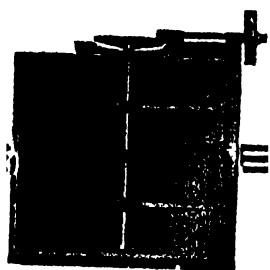
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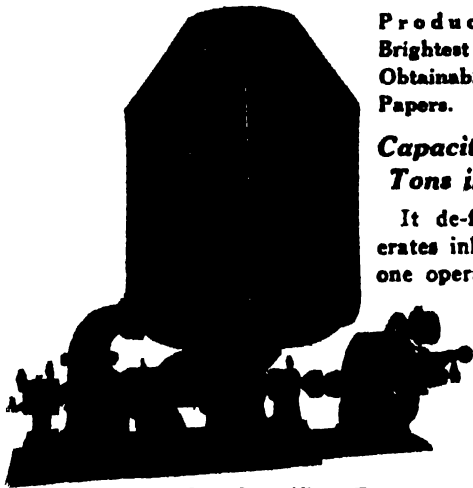
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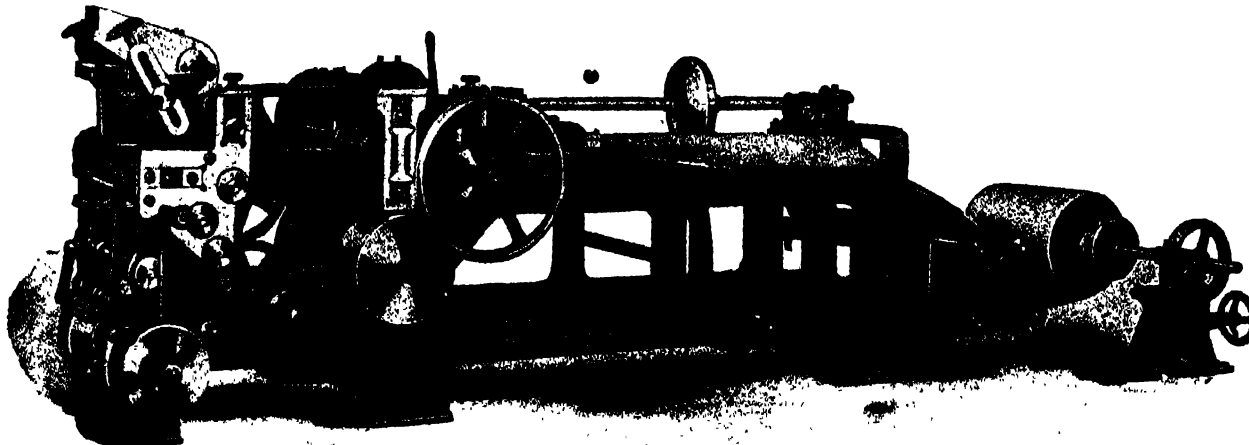
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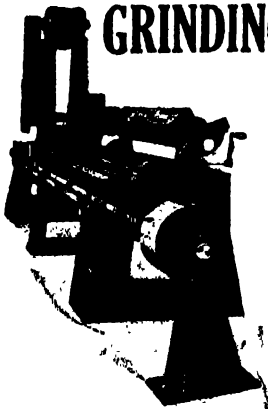
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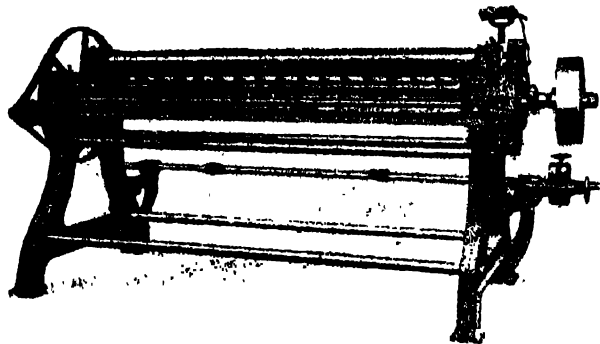
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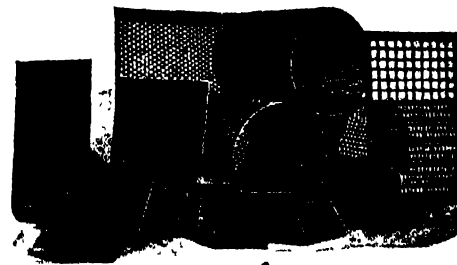
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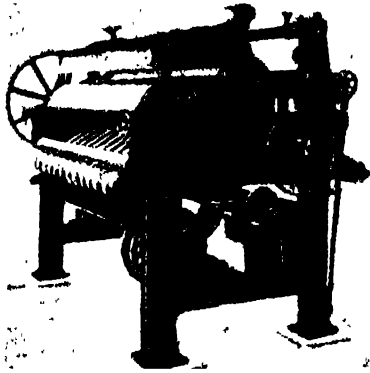
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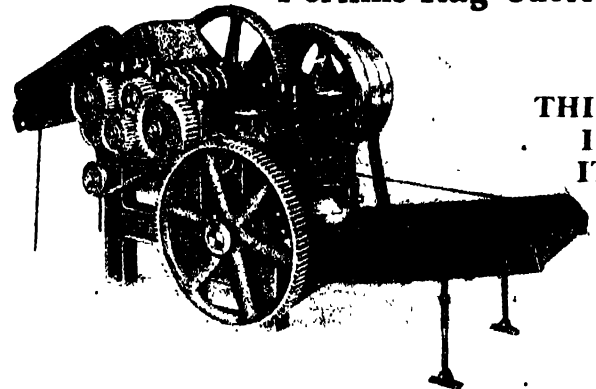
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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTIETH YEAR

PUBLISHED EVERY THURSDAY BY THE

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Thursday, April 6, 1922

Table of Contents

News of the Trade:

	PAGE
Production of All Papers During Month of February..	16
Escanaba Paper Co. Resumes ..	17
Plans for Salesmen's Meeting ..	17
Federal Commission Acts on Alaska Projects.....	17
J. T. Carey in Watertown to Discuss Strike Matter..	18
Harry C. Kinnie Returns from West ..	18
Plans for Machinery for Siam.....	18
New Plant for Dennison Mfg. Co., at Marlboro, Mass	18
Speculation in Canada on Request for Sulphite Duty..	20
Riordon Co. Making Progress.....	20
To Represent Stone & Andrew in Worcester.....	20
Chicago Paper Demand Slowly Increasing.....	22
General News of Chicago Trade.....	22
Paper Mills in Wisconsin Make Wage Readjustments..	24
Fatal Accident at Biron Mill, Wisconsin.....	24
Hungerford & Terry, Inc., Remove.....	24
Orders Small But Better in Philadelphia Market.....	26
Changes in D. L. Ward Co.....	26
Address by Joseph A. Borden at Meeting of Typothetæ	26
General News of Philadelphia Trade.....	28
News of the Boston Trade.....	28
Bids and Awards for Paper.....	30
Scandinavian Pulp and Paper Industry.....	30
Practical Questions and Answers for Mill Men.....	32
New Marble Paper Machine.....	32
Freeport Sulphur to Construct New Mine.....	32
New American Writing Service Houses.....	32
New York Trade Jottings.....	34
Gummed Cloth Sealing and Binding Tapes.....	36
German News Print Statistics.....	39
Paper Merchants to Meet With Manufacturers.....	39

Paper Industry Leads in Business Symposium.....	42
Final Survey for Alaska Paper Project.....	49
Simplex Paper Corp. to Increase Capital.....	49
Experimental Paper Mill for Siam.....	50
Woodlands Section Convention Program.....	52
Imports and Exports.....	56

Editorial:

Signs of Spring.....	38
Foreign Paper Prices Declining..	38
Business Making Rapid Recovery.....	38

Technical Section:

The Origin of So-Called "Mildew" Injury to Paper	
Makers Felt	41
The Determination of Sizing Quality.....	43
Current Paper Trade Literature.....	50
Process for the Treatment of Esparto.....	50
Production of Alcohol from Sulphite Waste Liquors..	51

Obituary:

John Russell	30
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Market Review:

New York Market Review.....	58
Market Quotations	59
Miscellaneous Markets	62

Want and For Sale Advertisements, Pages 68 and 69

PRODUCTIONS OF ALL PAPERS DURING MONTH OF FEBRUARY

According to Statistics Stocks of All Grades Except Board, Hanging, Bag and "Other Grades," Increased During the Month—News Print Mill Stocks Equalled Six Days' Average Output; Book Paper Mill Stocks Equalled Thirteen Days' Average Output; Paper Board Mill Stocks Equalled Ten Days' Average Output and Wrapping Paper Mill Stocks Equalled Twenty-five Days' Output.

[BY OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., April 5, 1922.—The attached tabulation is a summary of production, shipments and stocks of paper mills in the United States as reported to the Federal Trade Commission for the month of February, 1922. This summary is compared with the month of February, 1921, 1920, 1919 and 1918. The average production is based upon the production for the years 1917-1921, inclusive, and the average stocks are based upon the stocks carried for the years 1918-1921, inclusive. The production has been classified for convenience into 12 grades, according to the grades of paper manufactured by the reporting mills. Some mills making several grades appear in more than one group, which causes duplication in the body of the tonnage tables in the number of mills.

The variation in the number of mills from one period to another is due, in part, to the fact that some mills do not run continuously on the same grade.

The stocks of paper carried by different mills depend not only upon the condition of the market but also upon the kind of paper made, trade customs, etc.

Tonnage Summary

Production, shipments and stocks of paper, by grades, for the month of February, 1922, compared with February, 1921, 1920, 1919 and 1918, together with average production and stocks.

Grade	Number of Mills	Production of month	Shipments	Stocks month-end
News Print (Standard and Special Grades of News):		Net tons	Net tons	Net tons
February, 1922.....	65	26,550	97,786	27,815
February, 1921.....	88	32,417	103,040	39,176
February, 1920.....	84	16,934	114,235	27,955
February, 1919.....	66	21,219	103,248	25,471
February, 1918.....	66	28,928	93,504	28,014
Average.....	...	...	101,200	25,307
Standard News:				
February, 1922.....	50	21,784	91,050	22,898
February, 1921.....	67	27,109	94,823	33,293
February, 1920.....	69	14,576	105,342	24,795
February, 1919.....	51	16,489	94,224	19,543
February, 1918.....	50	27,232	83,474	24,886
Average.....	...	...	91,724	20,900
Book (M. F., S. S. C. and Coated):				
February, 1922.....	84	38,463	69,408	68,537
February, 1921.....	94	28,880	56,687	51,980
February, 1920.....	96	23,546	85,532	80,644
February, 1919.....	91	34,038	62,616	63,870
February, 1918.....	91	28,982	64,160	64,784
Average.....	...	...	67,459	30,305
Paperboard, Total (Straw-Fibre, Leather, Chip, etc.):				
February, 1922.....	205	62,731	153,704	152,527
February, 1921.....	242	58,479	123,832	121,588
February, 1920.....	242	43,228	176,855	175,416
February, 1919.....	232	53,217	125,208	118,973
February, 1918.....	232	34,714	142,968	142,687
Average.....	...	...	145,222	49,989
Boxboard:				
February, 1922.....	122	29,483	107,842	108,129
February, 1921.....	139	28,696	89,785	89,123
Average.....	...	...	102,511	26,048
Wrapping (Kraft, Manila, Fibre, etc.):				
February, 1922.....	126	54,506	62,035	57,290
February, 1921.....	145	45,241	46,352	40,317
February, 1920.....	147	25,653	61,574	55,754
February, 1919.....	161	51,397	45,480	37,325
February, 1918.....	161	43,305	53,074	59,942
Average.....	...	...	54,418	43,482

Bag (all kinds):				
February, 1922.....	39	3,790	14,560	14,885
February, 1921.....	37	3,466	7,603	7,771
February, 1920.....	44	2,343	17,777	16,622
February, 1919.....	37	3,896	10,392	10,115
February, 1918.....	37	5,372	13,158	15,388
Average.....	...	...	12,213	...
Fine (Writing, Bonds, Ledgers, etc.):				
February, 1922.....	101	35,331	26,663	26,190
February, 1921.....	106	34,748	19,242	16,593
February, 1920.....	110	28,791	29,202	25,713
February, 1919.....	113	36,075	24,600	23,052
February, 1918.....	113	32,675	25,303	32,626
Average.....	...	...	24,541	...
Tissue (Toilet, Crepe, Fruit Wrappers, etc.):				
February, 1922.....	92	7,036	15,273	14,286
February, 1921.....	99	9,122	9,372	9,640
February, 1920.....	100	5,850	14,745	13,811
February, 1919.....	88	6,344	9,432	8,369
February, 1918.....	88	6,026	11,631	11,680
Average.....	...	...	11,293	...
Hanging (No. 2 Blank, Oatmeal, Tile, etc.):				
February, 1922.....	19	7,089	7,211	8,689
February, 1921.....	25	4,799	7,522	4,918
February, 1920.....	22	960	6,554	8,076
February, 1919.....	21	2,666	8,260	8,368
February, 1918.....	21	6,464	4,047	4,335
Average.....	...	...	6,394	...
Felts and Building (Roofing, Sheathing, etc.):				
February, 1922.....	44	9,559	30,783	28,678
February, 1921.....	51	13,553	19,556	21,130
February, 1920.....	51	6,585	33,618	31,668
February, 1919.....	46	9,466	13,368	14,238
February, 1918.....	46	8,287	22,691	22,739
Average.....	...	...	23,023	...
Other Grades (Specialties not otherwise classified):				
February, 1922.....	90	19,916	24,394	24,447
February, 1921.....	94	18,236	14,760	13,461
February, 1920.....	84	14,005	22,308	21,378
February, 1919.....	58	11,254	12,528	12,202
February, 1918.....	58	13,210	22,651	22,803
Average.....	...	...	18,078	...
TOTAL—all Grades:				
February, 1922.....	...	264,971	501,817	492,050
February, 1921.....	...	248,941	407,966	383,679
February, 1920.....	...	167,895	564,500	532,336
February, 1919.....	...	229,572	415,132	395,508
February, 1918.....	...	207,963	453,187	471,402
Average.....	...	...	463,841	...

The following stocks were reported on hand at terminal and delivery points on February 28, in addition to the mill stocks shown in the tabulation: News print, 522 tons; book paper, 3,365 tons; fine, 17 tons; paper board, 140 tons; wrapping, 5 tons; and "other grades," 329 tons.

Stocks of all grades, except boxboard, hanging, bag, and "other grades," increased during the month. Stocks of all grades reported by manufacturers at the end of February amounted to 279,116 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported news print stock and tonnage in transit aggregating 206,479 tons.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic mills on February, 28, with their average daily production, based upon the combined production for 1918 to 1921, inclusive, the figures show that:

News print paper mill stocks equal 6 days' average output.

Book paper mill stocks equal 13 days' average output.

Paper board mill stock equal 10 days' average output.

Wrapping paper mill stock equal about 25 days' average output.

Bag paper mill stocks equal about 7 days' average output.

Fine paper mill stocks equal about 34 days' average output.

Tissue paper mill stocks equal 16 days' average output.

Hanging paper mill stocks equal slightly more than 20 days' average output.

Felts and building paper mill stocks equal 12 days' average output.

Miscellaneous paper mill stocks equal 25 days' average output.

Total paper mill stocks of all grades equal about 14 days' average output.

Imports and Exports

The imports and exports of all grades of paper for January, 1922, compared with January, 1921, as shown by the records of the Department of Commerce, were as follows:

	January, 1922		January, 1921	
	Pounds	Value	Pounds	Value
Imports:				
News Print	164,964,408	\$5,941,351	138,896,868	\$8,763,375
Book Paper	43,549	4,636	742,905	103,207
Wrapping	2,278,808	81,355	718,130	35,024
Hanging		37,057		38,118
All other grades (a)		133,166		377,796
Exports:				
News Print	5,073,172	216,254	4,943,438	394,995
Book Paper	1,767,737	190,406	11,421,465	1,930,926
Paper Board		224,485		1,066,968
Wrapping	2,154,006	154,608	4,208,386	598,601
Bag		105,446		260,024
Fine		165,866		1,372,442
Tissue		69,077		111,978
Hanging		38,306		101,820
All other grades (a)		268,677		1,060,386
TOTAL Imports		6,197,515		9,317,550
TOTAL Exports		1,431,125		6,898,143

News print is the only grade of which the United States is a heavy importer. The bulk of this tonnage, the value of which amounted to \$5,941,351 for January, 1922, is imported from Canada. The value of the exports of news print in January, 1922, amounted to \$216,254, which is about 42 per cent of the news print imported.

The value of the total imports of all grades was about 3 per cent less than for December, 1921. The value of the total exports for January, 1922, was \$5,465,018 less than the value of the exports for January, 1921, and \$4,764,410 less than the value of the imports for January, 1922.

News print, book, wrapping, paperboard and fine were the principal grades exported, as to value.

Loss of Production

The idle machine time reported to the Commission for February, 1922, is shown by grades in the attached tabulation. This does not include the machines in 21 mills which were closed down completely. The reasons tabulated for lost time are lack of orders and repairs. "Other reasons" include lack of material, lack of water power, etc. The time lost in February, 1921, is given by grades and reasons for purposes of comparison.

Grade	Lack of Orders		Repairs		Other Reasons		Total	
	1921	1922	1921	1922	1921	1922	1921	1922
News Print:								
Number of machines.....	17	28		10	10	5	36	43
Total hours idle.....	4,338	4,351		1,102	311	6,377	7,477	
Book Paper:								
Number of machines.....	96	141		15	17	4	135	160
Total hours idle.....	12,265	22,694	1,155	3,060	1,412	1,015	14,852	26,769
Paperboard:								
Number of machines.....	201		18	31	62	57	251	289
Total hours idle.....	25,374	46,956	1,115	5,369	13,850	14,144	40,339	66,469
Wrapping:								
Number of machines.....	68	94		12	22	27	112	133
Total hours idle.....	7,749	17,010	2,015	2,029	2,564	4,599	12,328	23,638
Bag:								
Number of machines.....	16	14	3	3	6	3	25	20
Total hours idle.....	2,214	3,647	111	274	474	687	2,799	4,608
Fine:								
Number of machines.....	78	106	8	36	55	13	141	155
Total hours idle.....	14,828	16,183	881	4,094	3,412	1,879	19,121	22,156
Tissue:								
Number of machines.....	50	101	31		32	10	113	128
Total hours idle.....	6,656	20,584	1,367	357	5,559	2,750	13,582	23,691
Hanging:								
Number of machines.....	17	18	1	4	1	0	19	22
Total hours idle.....	2,622	2,125	227	219	39	0	2,888	2,344
Belts and Building:								
Number of machines.....	19	23	9	1	7	15	35	39
Total hours idle.....	3,564	4,987	465	40	708	2,253	4,737	7,280
Other Grades:								
Number of machines.....	48	58	1	11	18	17	67	76
Total hours idle.....	7,401	12,037	72	2,359	3,986	3,633	11,459	18,029
Total number of machines.....	580	784	124	130	230	151	934	1,065
Total hours idle.....	87,011	150,574	8,345	20,596	13,126	31,291	128,482	202,461

Escanaba Paper Co. Resumes

[FROM OUR REGULAR CORRESPONDENT.]

ESCANABA, Mich., April 3, 1922.—The Escanaba Paper Company, which has been down for the past four months, started up again Monday morning, April 3, at full capacity.

Plans for Salesmen's Meeting

Paper salesmen eligible to membership in the Salesmen's Association of the Paper Industry will not be permitted to attend the annual banquet of the salesmen's association on Tuesday, April 11, during the annual Paper Week in New York. This was the decision reached by the second annual monthly luncheon of the New York members of the salesmen's association last week, when a score of New Yorkers sat down at the Arkwright Club to discuss plans for the annual convention of the association.

Reservations are coming in in such promising numbers that it was decided that it would be unwise to throw the banquet open to eligible salesmen who are not sufficiently interested in the association to join. Membership applications, however, will be received until shortly before the banquet.

Many paper mill executives are being specially invited, and all of the "big bosses" will be eligible to attend the banquet, at which the chief speaker will be Congressman Daniel A. Reed, one of the East's best-known inspirational speakers.

The luncheon at the Arkwright Club was devoted almost entirely to the plans for the banquet. The registration fee will be \$10, which will include the buffet luncheon at noon, the price of the evening banquet, and include a lady guest at the banquet. The plan adopted last year of having dancing as a feature of the evening's program was reported to be meeting with great favor. There will be dancing between courses, and after the speaking program.

Federal Commission Acts on Alaska Projects

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 5, 1922.—The Federal Power Commission has approved the application for preliminary permit in Project No. 61 of the Wrangell Pulp and Paper Company of Wrangell, Alaska for a preliminary permit to develop 12,000 horsepower on Grant and Harding Creeks, tributaries of the Bradford Canal.

The application of L. J. Vogter of Tacoma, Wash., for a preliminary permit to develop power at Swan Lake and Fish Creek, Tongass National Forest, Alaska (Project No. 60, Alaska), was rejected. The proposed project is in conflict with a proposed

project of Paul Butler of the Butler Paper Corporation. Mr. Vogter was unable to make any showing of ability to carry out his proposed project. As he had been informed six months ago that the application would be rejected unless he could make further showing, the above action was taken.

J. T. CAREY IN WATERTOWN TO DISCUSS STRIKE MATTER

Mr. Carey Says Question of Renewing Agreements Which Expire May 1 in Most Mills Will Be Taken Up Soon and Hastened to a Conclusion—Feeling Seems to Prevail That There Will Be No Trouble With the Men Under Mr. Carey, but That the Pulp Workers May Start Something—The Ultimate Outcome, It Is Believed, Would Result in a Victory for the Manufacturers.

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., April 3, 1922.—Jeremiah T. Carey, president of the International Brotherhood of Paper Makers, reached this city Saturday noon for a few days' conference with various locals in this part of the state. The bad storm which he said prevailed in Albany before he started made it impossible for him to drive his automobile and equally difficult for him to reach the various mill towns he planned to enter. He said it was his plan to discuss the situation with the striking employees of the local International Paper Company Saturday night and then go to Pyrites, Deferiet and Norwood.

"The question of renewing the agreements which expire on May 1 in most mills will probably be taken up within about ten days and then hastened to a conclusion," he said in answer to a query on that point. "I would not say that I am up here for the purpose of taking up that subject with the locals, but it is probable that the subject will be discussed while I am here." He agreed that it was possible that the men in his union might be receiving a fair wage compared to the prices the manufacturers are able to obtain, and this led to the conclusion that there need be little fear of serious difficulties in the mills on May 1 growing out of the papermakers' dissatisfaction. He said he had no idea of the attitude that might be taken by the pulp and sulphite workers under the leadership of J. P. Burke.

The agreements promulgated by the arbitration board last year expire on May 1, and there is no provision for renewal. This must be adjusted between the employees and the employers. As far as can be learned no discussion of the subject has been held between labor leaders and local manufacturers.

A feeling seems to prevail here that there will be no trouble with the men under Mr. Carey, but that the pulp workers may start a fuss. In such event there would be nothing to require the skilled papermakers to stop work if the lower priced laborers should not be able to perfect an agreement and decided to strike.

From some of the mill towns comes the report that many of the unskilled workmen are not satisfied and are willing to work nine hours a day. With such a condition obtaining it is believed that there would be difficulty in holding the ranks together in case of a strike in which the papermakers did not join, with the ultimate outcome a victory for the manufacturers and practically the open shop.

Harry C. Kinnie Returns From West

Harry C. Kinnie of the Bagley & Sewall Company and City Councilman, returned Friday night from a nine weeks' trip to the coast. Since leaving Watertown he has traveled nearly 10,000 miles visiting the paper manufacturing trade across the continent and from the Gulf of Mexico to within a few miles of the Alaska border.

He visited the Grand Canyon in Colorado for two days on his trip west and returned through the Canadian Rockies. He passed days in San Diego, Los Angeles, San Francisco, Portland, Seattle, Vancouver, Ocean Falls in British Columbia, which is 300 miles below the Alaskan border, Victoria and Port Angeles out on the peninsula. Business and pleasure were combined on the trip and

Councilman Kinnie said it was somewhat of an acquaintanceship visit to paper manufacturers and customers and that he would not comment on the business success of his trip.

"There are lots of men out of work out there," he said, "and they are about where we were six months ago so far as economic conditions are concerned. The lumber business out there is booming, but the paper manufacturing business is just fair. The cost of living is higher than in the East and taxes are ridiculously high."

Hanna Paper Corp. Meets

The annual meeting of the Hanna Paper Corporation was held in local offices Monday forenoon. The election of Carl Martin as assistant treasurer was the only change made in the election of officers and directors.

Floyd L. Carlisle, president; D. M. Anderson, vice-president; R. B. Maltby, vice-president and secretary and treasurer; F. P. Wadley, assistant treasurer; Carl E. Martin, assistant treasurer; Paul C. Hodskins, assistant secretary; is the list of officers of the company.

President F. L. Carlisle said that no business of importance was taken up at the meeting, beyond the election of directors and officers.

Plans for Paper Machinery for Siam

WILMINGTON, Del., March 30, 1922.

EDITOR, PAPER TRADE JOURNAL:

Our attention was called to the article on page 49 in the March 16 number of the PAPER TRADE JOURNAL, with reference to the experimental paper mill to be shortly installed in Siam. We are particularly interested in the reference to the mill being patterned after the one established by the Canadian Government at McGill University at Montreal, and in justice to all concerned we feel compelled to acquaint you with the true facts leading up to this installation.

Commencing about three years ago, on the request of the Siamese Minister in Washington, the Bureau of Standards, Washington, D. C., carried on experiments as to the possibility of successfully making pulp and paper from banana stems, bamboo, and several different kinds of grasses. This work at the Bureau was at first in charge of Mr. Durkin, who was succeeded later by F. A. Curtis, the present chief of the Paper Section, and Mr. Curtis was finally advised about eighteen months ago to prepare estimates on the cost of a complete plant very similar in every respect, except as to size, of the equipment in the Bureau at Washington.

Mr. Curtis had the assistance of this company in preparing his plans and specifications, and we finally secured the contract for furnishing the paper machine, as well as considerable of the auxiliary equipment.

For your further information we are enclosing copies of our March, 1919, April, 1920, and July, 1921, *Super-Calender*, illustrating and describing the experimental machines we have furnished in the past, and also the Siamese machine.

We wish to state that all credit will be due Mr. Curtis for the successful installation and operation of this mill.

Yours very truly,

THE PUSEY & JONES COMPANY.

New Plant for Dennison Mfg. Co., at Marlboro, Mass.

MARLBORO, Mass., April 3, 1922.—The Dennison Manufacturing Company, manufacturers of tags, paper goods, etc., with a large plant at Framingham, Mass., has awarded contract to the Aberthaw Construction Company, of Boston, for a new plant at Marlboro.

The first unit will be a large fireproof building and will house several hundred hands.

ROBERTSFORS A.-B. ROBERTSFORS, SWEDEN

**We have on dock at Boston and Baltimore
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SPECULATION IN CANADA ON REQUEST FOR SULPHITE DUTY

If This Legislation Goes Into Effect, Despite the Opposition of American Publishers, It Will Be a Severe Blow to the Pulp Industry of Canada—Pulp Competition, It Is Pointed Out Comes from European Countries Rather Than from Canada—Contracts on Pulp Filled by the Saguenay Pulp and Power Co. Said to Have Reached \$16,250,000 in Ten Years—Delivers News Print in Record Time.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., April 3, 1922.—There has been considerable speculation here over the announcement that the Senate Finance Committee at Washington has given a definite assurance to sulphite manufacturers of the United States that impending tariff legislation will provide a duty of 10 per cent on all imports into the United States of every kind of wood pulp. It is admitted that if this legislation goes into effect, despite the opposition of American publishers, it will be a severe blow to the pulp industry of Canada, but it is thought that the suggestion is meant more in the nature of a threat to be used in connection with the agitation to secure the removal of the restrictions placed by the Canadian provincial governments on the export of pulpwood cut on Crown lands. In this connection it is recalled that some two years ago there was a suggestion to prohibit the export of coal, sulphur and other raw materials to Canada unless the free export of Canadian pulpwood was allowed. The proposal was vetoed by President Wilson. As regards the competition of Canadian pulp producers with those in the United States, it is pointed out that the competition comes more from European countries than from Canada, and surprise is expressed that the United States government has not had recourse to anti-dumping legislation.

The importance of the United States market for Canadian pulp is seen by the figures of the Trade and Commerce Department at Ottawa of reports for the ten months ending January 31, 1922. These amounted to \$21,542,000, but the previous year's total (11 months) was over double, \$54,837,082. The normal average would lie between the two, representing a very substantial total.

Pulp Exports to United States

Eleven months ending January 31,	1922	1921
Sulphate (kraft)	\$6,287,736	\$10,977,585
Bleached sulphite	5,802,483	11,811,119
Unbleached sulphite	5,551,994	20,813,457
Groundwood	3,900,267	11,234,921
Total	\$21,542,090	\$54,837,082

If the proposal of the Senate Finance Committee goes into effect, there will be an immediate demand on the government here to put an export tax on pulpwood, which will affect the large quantities now cut on private lands and now exported freely to the United States. Many United States pulp and paper mills are dependent upon this source for pulpwood.

For the ten months ended January 31, 1922, the exports of pulpwood from Canada were 630,540 cords, equal to about 420,000 tons of paper when manufactured. The value set down for this was \$7,926,536, or about \$12.50 a cord. The year before the exports were 1,243,112 cords, equal to 800,000 tons of paper.

A \$16,000,000 Profit

An analysis made of the contract between English pulp dealers and newspaper owners with the Saguenay Pulp and Power Company shows that the net profit accruing to the company over the period of 10 years covered by the contract will reach \$16,250,000,

or an average of \$1,625,000 a year. This is computed on the contract agreement, which will allow the company a net profit, after interest, depreciation, etc., and all operating expenses, of \$10 on every ton of sulphite pulp. Taking the total amount of groundwood to be supplied at 1,100,000 tons, the profit on this alone would be \$11,000,000. Taking the sulphite total at 350,000 tons, the profit on this would be \$5,250,000.

Record Delivery of News Print

A feat of unusually bright service was performed last week when the *Chicago Tribune*, finding itself suddenly faced with a news print shortage, on Friday sent an S. O. S. order to the Abitibi Pulp and Paper Company at Iroquois Falls, Ont., for a thousand tons of paper for instantaneous delivery.

The company had the news print in stock, and passed on the S. O. S. to the Canadian Pacific agent at North Bay, who immediately despatched forty cars over the Temiskaming & Northern Ontario route, through hundreds of miles of forest and plain to the mills. These cars were loaded up immediately upon their arrival, and started on their journey with their \$70,000 cargo—thundering on to North Bay over the T. & N. O. lines, then connecting up with a new engine, and pounding away over the C. P. R. lines to Detroit, where they were switched on over the Michigan Central road to Chicago, achieving the run in record passenger train time—fifty hours and twenty-five seconds—arriving on Sunday in time for the Monday's edition.

The tens of thousands of readers who purchased the paper on the Chicago streets little knew the stress under which they were furnished it.

Northern Ontario still supplies a half of the news print of Canada, the total production of which is about 2,500 tons per day.

Newfoundland Scheme Falls Through

The legislature of Newfoundland has been notified by the premier of withdrawal by the Reid-Newfoundland Railway Company of its proposition for extensive water-power development and establishment of paper making and other industries along the Humber River, on the west coast of Newfoundland. The proposition, in which an English firm also was interested, called for government guarantee of certain securities.

Riordon Co. Making Progress

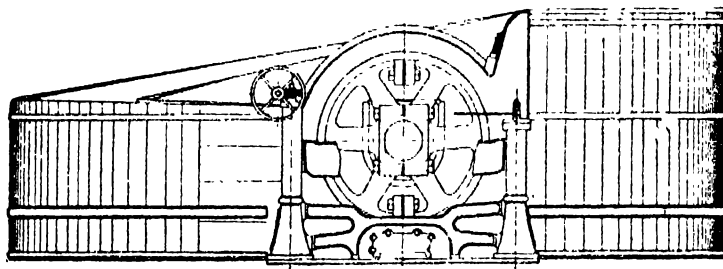
R. Montague Davy, chairman of the Creditors' Committee in charge of the affairs of the Riordon Company, Limited, has issued a statement to creditors to the effect that satisfactory results have attended the operations at the Hawksbury and Kipawa mills, and as a result the company's bank loans, which, of course, were secure, have been reduced by \$803,277, and they now stand at \$2,442,103 for the Imperial Bank and \$1,167,959 for the Bank of Montreal. In addition, accrued back wages have been discharged. Furthermore, the committee has arranged with the board of directors of the Riordon Company that all creditors' claims will bear interest from November 19, 1921, and that all creditors so desiring may obtain a note confirming this fact. The committee hopes to issue a further letter in about one month's time.

To Represent Stone & Andrew in Worcester

WORCESTER, Mass., April 3, 1922.—Roy E. Knight, formerly Secretary of the Charles A. Esty Paper Company of Worcester, has recently been added to the sales force of Stone & Andrew, Boston, as resident salesman in charge of Worcester and surrounding territory.

Mr. Knight is well known in the trade, both in his home territory and outside, and he has a host of friends who wish him well in his new opportunity. Stone & Andrew have a most complete line of all grades of white papers and specialties, and are the exclusive New England Distributors for many high grade mills.

One company manufacturing liner and wrapping paper solved the problem of obtaining reasonable profit at present day prices and keen competition by cutting production costs through the installation of a "NIAGARA BEATER." The NIAGARA, which is beating charges of old paper and shavings, is giving a production of forty (40) tons per day. It has replaced three (3) pulpers and one (1) mixing engine.



Ask the Mill That Owns One

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Plant:
Appleton, Wis.

CHICAGO PAPER DEMAND IS SLOWLY INCREASING

April Certain to Develop Stronger Buying Tendency—Slow But Steady Progress Reported—Additional Demand on the Road from Catalog Houses—Competition Is Keen and Much Energy Is Expended in Effecting Sales—Slump in Strawboard During the Week—To Build New Bourke-Rice Envelope Co. to Replace One Lately Destroyed by Fire—Other News of the Chicago Trade.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, April 3, 1922.—That April will develop more concrete signs of a stronger buying tendency in the paper field is the general consensus of opinion in Chicago. Most of the trade here looks forward to a growing better business during this month, which is expected to show encouraging signs during the first and second weeks. During March business strengthened quite a little.

This process was not sudden, but as a jobber said today, "A steady improvement, even though slow, is healthier than a sudden turn from poor buying to very good buying."

"Paper is a commodity which depends to a large extent upon how industry in general feels about using it for publicity purposes," said one paper merchant here. "A certain amount is used regularly, of course, but above that amount depends on the attitude of paper consumers toward the advisability of going after business intensely. Just as soon as business in general feels that there is some advantage in advertising real heavy, and the catalog houses are ready to publish, there will be a much increased demand for paper, and that time is gradually growing nearer and nearer."

Competition is very keen in Chicago among the selling factors. However, even under existing conditions, the business is going forward in a very orderly manner, and rumors of price cuts which crop up every now and then, are answered with the remark that there is always some one who will "cut off his nose to spite his face." However, there are few merchants in the city who are holding their prices very far above any others in his branch of the industry. In fact, one member of the trade watches the market so closely that he calls each competing house daily before making any quotations.

There has been a slump in the call for strawboard here during the past few days. Up to the middle of last month, straw board was in fairly good demand, but from that time on the demand began decreasing until it is again at low ebb.

To Build New Envelope Factory

J. W. Bourke, president of the Bourke-Rice Envelope Company, whose plant was destroyed in the near west side fire last month has announced plans to establish one of the most complete and modernly equipped envelope factories in the middle west. This will be located at 520-22 South Clinton street, where an entire new equipment force will be installed. Immediately after the blaze had totally ruined its factory, Mr. Bourke arranged for temporary quarters with the Bradner-Smith & Company, 175 West Monroe street, and was able within 24 hours to say, "business as usual, and though our factory is still burning, we can still sell you envelopes."

Jack Neblung Goes to New York

Jack Neblung, who for many years has been identified in Chicago as local manager of Louis De Jonge & Co., recently left to assume the management of the New York City office of this company. Mr. Neblung has a wide acquaintance in Chicago and surrounding territory, and his friends were all sorry to see him leave. Just prior to his departure a party

was tendered to him, when he was presented by local members of the trade, with a mahogany desk set.

To Handle Ware Coated Paper Co. Line

Frank A. Sanborn, the Chicago manager of the McLaurin-Jones Company, with offices in the Transportation Building here, announces that he is now handling for distribution a complete line of Ware Coated Products, produced by the Ware Coated Paper Company Division of the recent combination of New England houses. Mr. Sanborn says that these products are receiving a favorable reception here.

To Exhibit at Candy Convention

At the last regular meeting of the Container Club, which was held in New York City last month, it was decided that the organization would participate in a confectionery convention coming to Chicago next month to the extent of being among the exhibitors at the Exposition in connection with the event, and show the various products of the membership, as well as the feasibility of shipping candy in paper board and fiber containers.

General Views of the Trade

George Goodsir, vice-president of the McLaurin-Jones Company, of Brookfield, Mass., was a visitor to Chicago recently, looking over business conditions here and making his headquarters at the Chicago office.

Harry G. Williams, Chicago manager of the C. L. La Boiteaux Company, has returned to Chicago, after spending two weeks on the East Coast of Florida.

J. W. Anderson, formerly identified with the Fox River Paper Company in Chicago, is now with the A. C. Allen Paper Company and will handle fine papers for this company. Mr. Anderson has a host of friends wishing him success in his new connections. He is well known in this territory.

Plans are being put into form to make the Pageant of Progress on the Municipal Pier, Chicago this year, a bigger and greater success than the initial event was last year. The show will be held from July 29 to August 14th, this year. Booths have been arranged for, each 10 by 20 feet, and the officers in charge are offering decorators' service to any exhibitors desiring it. One entire section was taken in this annual exposition last year, by the paper and allied industries.

The Republic Envelope Company wiped out by the big fire which destroyed a business block on the near west side last month, has taken temporary quarters until it is ready to locate in a new home, at 1211 Webster building.

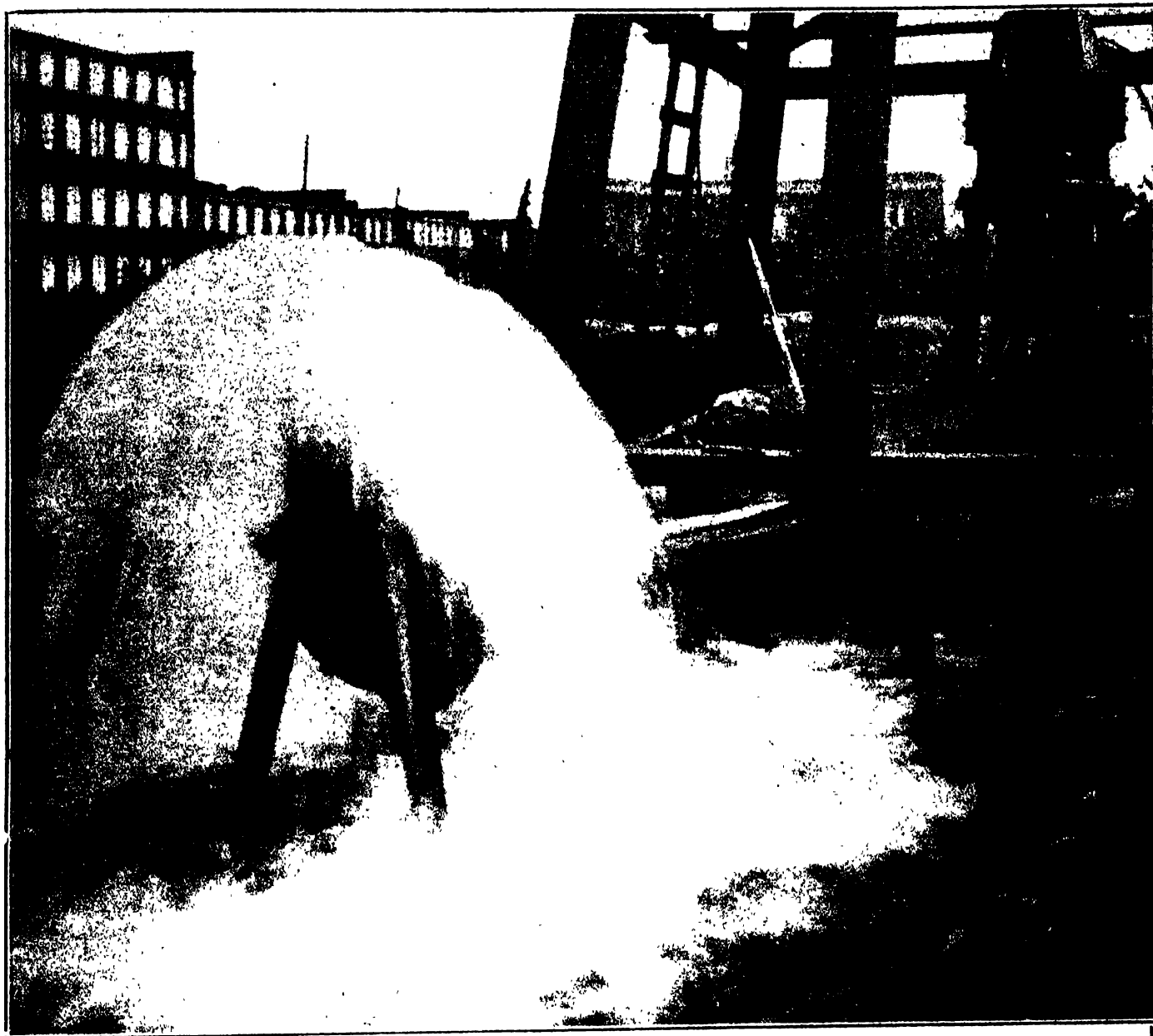
Price of Brass Fourdrinier Wires

The Armstrong Bureau of Related Industries for its clients, the manufacturers of paper machine wires, furnishes for publication the following prevailing market price information on brass Fourdrinier wires (new standard) as last quoted to the trade by the respective sellers and cleared through the Bureau:

	Price in Cents Per Sq. Ft.
No. 60 mesh	50-51
No. 65 mesh	52-53
No. 70 Mesh	56-57
No. 75 mesh	61-62
No. 80 mesh	61

Marathon Paper Class Doing Good Work

ROTHSCHILD, Wis., April 3, 1922.—The class in pulp and paper making which was organized here shortly after the first of the year meets every Tuesday evening in the general office of the Marathon Paper Mills Company. The discussions are becoming very interesting and the work is progressing more satisfactorily.



The above cut shows one of two wells recently constructed by us for The Richardson Company, Lockland, Cincinnati, Ohio, which are furnishing over 7,000,000 gallons of water per day. In a recent letter, Mr. J. M. Richardson, President, said "All of our other present wells are now obsolete"; also, "Our new wells have, in our judgment, added hundreds of thousands of dollars to the value of our property and ended for all time to come the old problem of a plentiful supply of good water."

Our Slogan:

"WATER OR NO PAY"

We construct and equip

Large Capacity Water Wells

Using the Layne Screen
and

Layne Vertical Turbine Pumps

*Sole Selling Agent for Layne
Products in Ohio and Indiana*

THE LAYNE-OHIO COMPANY

WATER WELL CONTRACTORS

837 Dixie Terminal Bldg.
CINCINNATI, OHIO

PAPER MILLS IN WISCONSIN MAKE WAGE READJUSTMENTS

Some of the Mills Made Wage Reductions as Early as February but the Majority Postponed Action Until April 1—Mill Men Hold to the Belief That There Cannot Be a Thorough Revival of Business Until There Is a Complete Readjustment of Prices and Costs in Relation to Each Other—Paper Business in Fox River Valley Shows Some Decline in Past Few Weeks—Escanaba Resumes.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 3, 1922.—Dozens of Wisconsin employers, including a number of paper mills, announce wage readjustments. Some of the mills had made the readjustments as early as in February, but the majority postponed action until April 1.

Mill men hold to the belief that there cannot be a thorough revival of business until there is a complete readjustment of prices and costs in relation to each other. So long as costs of producing a commodity are out of proportion to the price received for it or the price of a commodity is out of proportion to other prices, there cannot be the complete adjustment necessary to revival of industry and return of prosperity.

Slight Decline in Business

There has been a slight decline in the paper business in the Fox River valley in the last few weeks, paper mill men said. The decline is nothing serious, but it is noticeable. There have been several ups and downs in the business since the revival set in last fall. Business picked up the latter part of November and was fairly good until near the start of the year, when there was a seasonal decline. Business picked up again in February, but there has been a decline in the last few weeks. Paper mill men expect these ups and downs, with each peak higher than the preceding one, until next fall, when they believe the entire industry will be on a firm footing and business near normal.

White Rapids Paper Co. Formed

The White Rapids Paper Company has been organized in Wisconsin with a capital stock of \$200,000. Signers of the incorporation papers are T. Eugene Orbison and J. C. Lymer, of Appleton, and Ed. M. Hooper, of Oshkosh.

The company was organized for the development of water power, manufacture of paper and sale of surplus power as a private company. No immediate development or building is contemplated, organizers of the company state.

It is said the company owns valuable water power rights in northern Wisconsin which will be developed when the time is opportune.

Blasting Out Ice Jams

Blasting has been resorted to by the Consolidated Water Power and Paper Company to remove ice jams from near the powerhouse at Stevens Point. The ice was found to be three and four feet thick and little affected by the warm weather of the last few weeks. It was feared that if the ice was not removed from in front of the gates it would pile up and possibly break down the gates when the river neared flood stage.

Cellucotton Co. to Add Machine

Business of the Cellucotton Products Company of Neenah has increased so rapidly that it is necessary to install a new cellucotton machine and more apparatus to manufacture cellucotton specialties. The cellucotton mill was originally established in the old National Textile Company mill, but now preparations are being made to move it into the old Badger plant of the Kimberly-Clark Company. A paper machine in the Badger mill is to be converted into a cellucotton machine, it is said. Cellucotton is made into sanitary pads for which the demand is enormous.

Fatal Accident at Biron Mill

Two men were killed and ten others barely escaped with their lives on Sunday, March 26, when a head gate to flume under the Biron division mill of the Consolidated Water Power and Paper Company gave way and a torrent of water rushed through the mill. Twelve men were in the flume when the gate broke, but ten were rescued from the Wisconsin River into which they were washed.

One of the dead men, Fred Getzlag, was entangled in wires and crushed against the side of the flume. John Symanski was washed into the river, where he was drowned. His body has not been recovered.

Damage to the mill and to paper stock ran between \$5,000 and \$10,000. The mill was closed down until it was sure that Symanski's body was not in the debris in the flume. A new head gate was finished in about three days so the flow of water could be checked. A large part of the grinder room was under water for two days and the motors were slightly damaged.

The accident occurred when a crew of men were in the flume, which is under the grinder room, preparing to install a new set of grinders. A pump in an opening created by a coffer dam had ceased to work and the men were preparing to repair this pump when the head gate gave way. All the men, with the exception of Getzlag, who would easily have escaped if he had not become entangled in wires, were swept into the Wisconsin River, where they were rescued with considerable difficulty.

The cause of the accident has not been determined. The head gate apparently was in excellent condition. It had held back water under similar conditions for many years and inspection had shown no weaknesses.

One machine of the mill resumed operations on Wednesday evening after the accident, after it was definitely determined that Symanski's body was not under the mill. Motor trouble delayed starting the other machine for a few days longer.

This was the first fatal accident at the Biron mill in several years. Company officials said to their knowledge the gate was in good condition and had withstood similar strains many times in the last several years.

Hungerford & Terry, Inc., Remove

Hungerford & Terry, Inc., engineers and manufacturers of water filters, removed on April 1 from the Pennsylvania Building, Philadelphia, to Clayton, N. J., where they have recently completed a large concrete factory and office building equipped with the very latest machinery for the manufacture of their products.

The company long since outgrew its former quarters and its constantly increasing business necessitated this removal. It is now in a position to meet any increased demands that may arise for its new paper mill filter. The factory is only 18 miles from Philadelphia and has exceptional facilities for procuring all necessary materials for the manufacture of its apparatus. At the present time the total daily capacity of Hungerford filters exceeds 750,000,000 gallons a day.

Little Demand for Pulpwood in Maine

[FROM OUR REGULAR CORRESPONDENT.]

BANGOR, Me., April 5, 1922.—Very few Maine concerns will be in the market this year for pulpwood. Throughout the state there are huge piles of peeled wood for which there is little demand, despite very low prices offered.

One concern is reported to have lost \$1,500,000 on wood cut at top prices, and others are reported to have dropped anywhere from \$50,000 to \$210,000. Among the heavy losers are many farmers who cut wood, and in hopes of getting top prices held the product too long. Many of these men have gone into bankruptcy.

Regrinding Calender Rolls

Your new rolls are perfectly round, with perfectly parallel faces, or with perfectly crowned faces. They wear, however, the best of them — get out of round and lose their first trueness with hard usage.

You must then either send them back to the maker for regrinding or you can regrind them yourself on the same roll grinder which we use for this purpose, and which contributes to the high quality of Farrel rolls.

There follow some noteworthy features of Farrel roll grinders, a heavy machine for precise work—

Particularly fitted for putting the proper and important crown on the bottom rolls.

Made both for straight and crown grinding and in two styles, for rough and finish grinding.

Two emery wheels mounted on a swing rest to give absolute parallel grinding.

Made for variable speed regulation, either with alternate or direct current, assuring constant speed irrespective of the diameter of the roll.

Farrel Calenders and chilled rolls are known for the highest in quality.

We are the largest makers in the world of these products.

Write for Bulletin 756 and prices

F A R R E L

Established 1848

Foundry & Machine Company

Ansonia, Conn.

Branch Plant:
Buffalo, N. Y.

ORDERS SMALL BUT BETTER IN PHILADELPHIA MARKET

Improvement Most Marked in Fine Paper—While Demand for Cheaper Grades of Coarse Papers Is Still Slow There Is Nevertheless a Betterment in Conditions and Prices Are Near Stabilization—Vice President William S. Wilcox in Charge of Brook Paper Department, Vice President Thomas S. Furlong in Charge of Fine Paper Department and E. T. Walter, Jr., to Withdraw from Ward Co.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, April 3, 1922.—The fine paper trade enjoyed the largest percentage of the better business of the week, and while none of the lines are of outstanding activity, there is a good steady inquiry for all. In the coarse paper division, the market for the cheaper grades still is rather sluggish, but its tendency nevertheless is upwards, and there is now a near stabilization of prices. The better grades of kraft are in a steady but growing demand, with prices hardening.

In rags and paper stock there is just about enough business afoot with the majority of the houses to warrant keeping warehouses open and the forces of sorters and packers at work, but not enough to produce any profit. Even thus, however, the dealers are fairly well satisfied because the days when every team load of stock left the warehouse represented a loss, have passed, and the days of the even break have succeeded.

Changes in D. L. Ward Co.

Far exceeding in interest and probably in importance any news development relating to the personnel of the trade in this city for a decade or more, is the announcement made at the close of the week that there were about to withdraw from the D. L. Ward Company organization Vice-president William S. Wilcox, in charge of the book paper department, Vice-president Thomas S. Furlong, in charge of the fine paper department, and Vice-president E. T. Walter, Jr., in charge of the coarse paper department. The importance of the change is suggested by the official positions held by these men, two of whom, Mr. Wilcox and Mr. Walter, also were directors of the Ward company. Miss Pearl E. Chilson, confidential secretary to George W. Ward, also will leave that organization when the others do on April 15. It is understood authoritatively, although not officially, that the three vice-presidents will associate themselves in a paper distributing business, which, like the Ward company, will carry all lines of production. Though the trade is discussing most earnestly in connection with the report of the changes possibility of the taking over by the new organization of the S. D. Warren, the Valley Paper Company and other accounts, no definite information on this point has been announced further than the positive statement by the Ward company that the Warren account will remain with it. While gossips in the trade for months have been discussing the possibility of the withdrawal of Mr. Wilson and his associates, actual news that they had announced their intention of withdrawing came with a sense of great surprise and for a while was discounted as being merely the revival of the six months' old rumor. However, at the close of the week, the authoritative statement was made that on April 15 they would sever their connections with the Ward firm. Until that time, those most directly concerned are withholding statements of their future plan.

Mr. Walter has been longest in the service of the Ward company. He began with it almost twenty years ago and was regarded as an almost irremovable part of the organization. He is generally credited with being one of the best informed authorities in the coarse paper business in all the trade.

Mr. Furlong has been active in the paper business for more than

a score of years. He was with the old firm of I. N. Megargee & Co. for many years, and subsequently with its successor, the Megargee, Hare Company, for several years until its absorption by the D. L. Ward Company in July, 1919. Mr. Wilcox also is recognized as one of the best posted men on book papers in the entire trade. He came to the Ward company about four years ago from the Ticonderoga Pulp and Paper Company and he enjoyed a very wide acquaintanceship in the trade.

Address by Joseph A. Borden

Executives or representatives of the sales organizations of nearly all the fine paper distributors of the city were in attendance at the meeting on Wednesday night of last week of the Typotheta of Philadelphia at the Meridian Club, Chancellor and Canac streets, attracted by the presence there of Joseph A. Borden, director of the service department of the American Writing Paper Company, who delivered an address specifically designed to develop a larger market for printing and thereby for printing papers through a nationally conducted campaign of co-operation between the company and organizations of printers, engravers, lithographers, stationers and other converters of paper. Though the Garrett-Buchanan Company is the sole distributor for the American Writing Paper Company in this city, recognition was given to the fact that the campaign which it is conducting through the printing and distribution of a series of booklets addressed to printers, salesmen of printing and buyers of printing, is general in its scope, by no means applies specifically to the American Writing Paper Company, and is therefore beneficial to the entire industry, and so representative of the Whiting, Patterson Company, Regal & Co., the D. L. Ward Company, the Molten Paper Company, the Whitaker Paper Company, E. Latimer, Jr. and others joined with the Garrett-Buchanan representatives.

Mr. Borden emphasized the necessity on the part of the printing trade of immediately counteracting the popular sentiment that the most of printing and of printed advertising is unduly high. A serious problem in the printing and paper industries faced those interested in it, he said, because the printing industry has expanded so much in the past three years that if all the presses in all the printing and lithographing industries were to be run at 100 per cent capacity, there would not be enough paper mill machinery in existence to supply its needs. The paper manufacturer, he said, realized this condition and was giving thought to some plan which would enable the printers to fill up the enormous gap created by idle equipment, this taking the form of curtailing grade and of standardizing paper to reduce its cost, and that they entertained the hopes that the printers would co-operate by developing their sales departments to a higher degree. Said he, "To create more printing salesmen and to imbue them with a knowledge of the real value of printed advertising will take time, but it will have to be done. To make the large number of business concerns of this country use printed salesmanship regularly as a regular part of their business procedure, is no easy task. I am hopeful, therefore, that all will interest themselves in the plan worked out by the American Writing Paper Company for one year's intensive effort, the company standing ready to pay all the bills and supply all the materials—the ammunition—and the printers merely to do the shooting."

Mr. Borden then entered into a lively and interesting discussion of the series of manuals which have been and are being published by the American Writing Paper Company and which will be distributed as printer manuals to local Typotheta who co-operate, to be distributed by them to members and printing salesmen, and a second series, the consumer manuals, to be sent by the local Typotheta to the buyers of printing. The third unit in the campaign deals with salesmanship in print and is of an educational value. He closed by pointing out that the campaigns proposed were not an advertising scheme to boost the interests of the American Writing

(Continued on page 28)

***There Is But One Way
To Buy Liquid Chlorine in Bulk***

And insure absolute economy of purchase with convenience and safety in handling and storing.

Buy it-- shipped in the

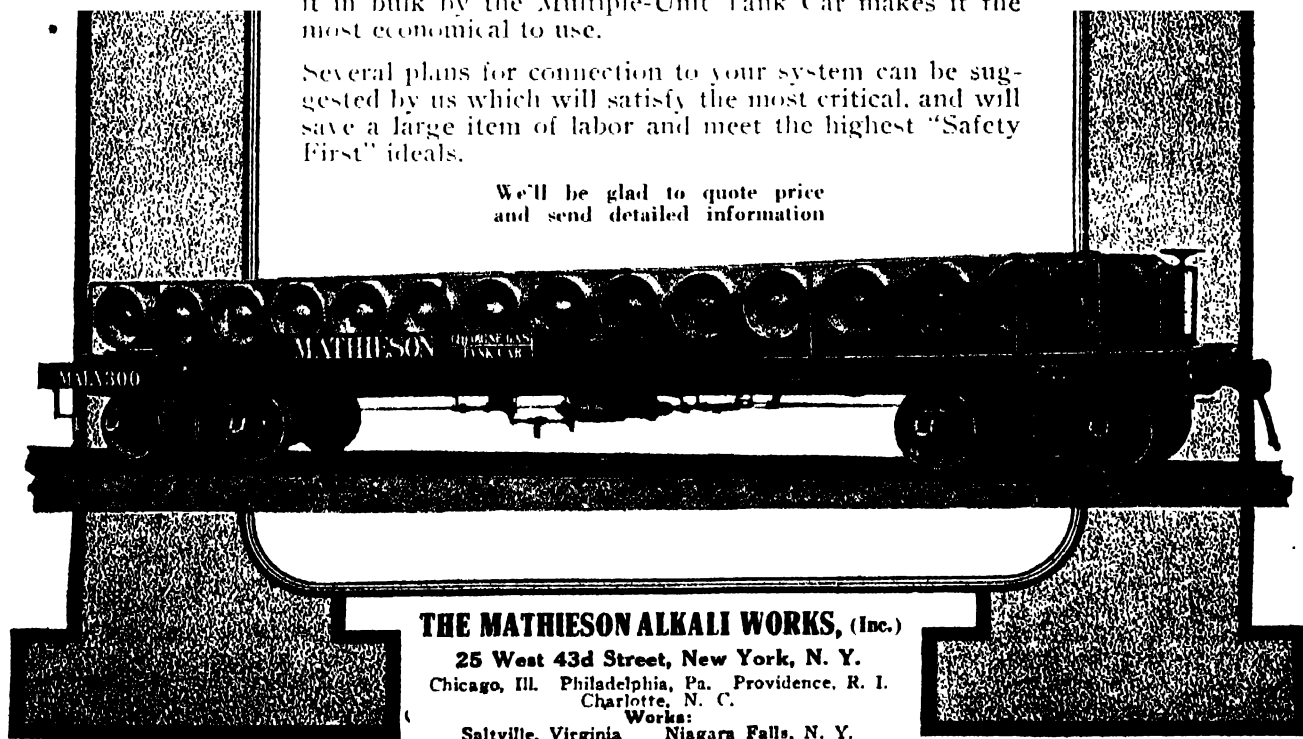
***Mathieson
Multiple-Unit Chlorine Tank Car***
(Patents Pending)

(A specially designed car carrying 15 one-ton individual containers of seamless, forge-welded steel, pressure tested to 500 lbs. per square inch complying with Interstate Commerce Commission specifications; inspected internally and cleansed before each charging.)

Mathieson "EAGLE-THISTLE" Brand Liquid Chlorine has an unimpeachable reputation for purity. Buying it in bulk by the Multiple-Unit Tank Car makes it the most economical to use.

Several plans for connection to your system can be suggested by us which will satisfy the most critical, and will save a large item of labor and meet the highest "Safety First" ideals.

We'll be glad to quote price
and send detailed information



THE MATHIESON ALKALI WORKS, (Inc.)

25 West 43d Street, New York, N. Y.
Chicago, Ill. Philadelphia, Pa. Providence, R. I.
Charlotte, N. C.
Works:
Saltville, Virginia Niagara Falls, N. Y.

ORDERS SMALL BUT BETTER IN PHILADELPHIA MARKET

(Continued from page 26)

Paper Company or to sell its products, but were general in their nature and beneficial to the entire industry, because just in proportion as consumption of the printed page was increased, benefits would accrue to all the paper-making industry and the American Writing Paper Company as one of its elements, there being in the series of booklets not a single word applying only to the company with which he is connected.

Paper Stock by All-Water Route

History was made in the local annals of paper stock transportation during the week by the arrival in this port of a barge from New York on an all-water route system. It carried 100 tons of stock which were loaded in New York and three days afterwards reached Pier 78 South Wharves, foot of Snyder avenue, to continue its journey down the river, up the Schuylkill and through the canal to the plant at Manayunk of the Philadelphia Paper Manufacturing Company. The inland waterway trip was made by the Delaware and Raritan Canal to Bordentown and then down the Delaware. This is believed to be the first time that a cargo of stock has thus been shipped. The estimated waterway freight is \$150, against about twice that amount for all-rail transportation. The Universal Waste Paper Products Company, which organized the water transportation system and which for some time has been using barges to ship stock from Snyder avenue wharf to Manayunk, has it believes solved the problem of cheap transportation, and during the week it added another barge to its local service. There are now four of these barges which under convoy of a tug make trips from Philadelphia to Manayunk on a conservative basis, it is estimated that the freight cost is cut \$1 a ton, a decidedly important factor these days. The transportation system is under the personal supervision of Manager W. G. Riles.

General News of the Trade

The plant of the Consolidated Paper Tube Company, formerly located at Beverly, N. J., is being removed this week to its new headquarters in the building at Twentieth and Erie avenue. The new quarters will give the firm 20,000 square feet of working space in the three-story factory, which has been leased and its location directly on the line of the Reading Railway gives it shipping facilities much superior than at its old plant. Removal was made solely to secure these improvements in transportation. The buildings formerly occupied by the Consolidated Company at Beverly have been sold to the Beverly Wallpaper Company, which proposed to use the mills as a wallpaper printing establishment. A line of paper tubes, cores and allied products are made in the plant and are sold to Auer & Twitchell, which also will remove from the Drexel Building to occupy the executive offices on the second floor of the new plant. Owners of the Consolidated Company are: J. F. Auer, president; Earl M. Twitchell, treasurer, and B. G. Bradbury, secretary. Installation of the machinery and equipment shortly will be completed. Auer & Twitchell are also distributors under its own brand for a line of bleached white towels.

After long experimenting, the Schuch Machine Company, Third and New streets, has perfected and is about to place on the market a shredding machine which it claims will slit all kinds of paper stock into one-eighth inch wide paper strips suitable for use as a substitute for excelsior or sawdust for a wide variety of packing purposes. A suggestion is made that the machine also advantageously can be used in paper mills for preparing trims for re-beating and that paper stock dealers installing it can turn waste to better account than packing it for the mills. Several sizes of the shredder are made, the smaller having a capacity of about two tons a day and taking paper up to 24 inches in width.

Larger quarters have been taken by the Melchior Paper Company and it is now in course of removal from Room 416 to Room

364, the Drexel Building. The firm, though only recently organized, has had a steady growth, specializing in sealing papers and pastes. Its newest product is a reinforced water-proof sealing tape, suitable for heavy and long distance packing purposes, made by the McLaurin-Jones Company, of Brookfield, Mass. Paul S. Melchior is president and William Melchior, secretary-treasurer.

Wedding bells rang twice during the week in the Levis home. On Saturday of last week there was solemnized the marriage of Charles Megargee Levis, vice-president of Curtis Brothers, Inc., to Mrs. F. William Curtis at her home on West 16th street, Wilmington. Two days before, Miss Agnes Howland Levis and Thomas J. Myer were united in marriage in St. Vincent de Paul Church, Germantown. Both Mr. and Mrs. Charles Megargee Levis are socially prominent. She is a daughter of the Corbitt family, socially prominent in Wilmington and he is a member of the Union League, Philadelphia Cricket and other clubs. Mr. Levis is just approaching three score years and for the present will reside at the bride's Wilmington estate, Kenett Side.

Completion of the building in Camden, N. J., of the Franklin Paper Company, which recently took city offices at 10th and Market streets, is announced. About a year ago, fire destroyed the several buildings which were located on a five-acre tract in South Camden. The reconstructed buildings took the place of comparatively new buildings erected a short time before the fire and were devoted to the manufacture of leatherette and specialty papers of a similar type. Until further arrangements are made for the continuance of the manufacture of these papers, the newly completed buildings will be used for storage purposes. Special machinery in the meantime will be installed and as soon as completed opened up for manufacturing.

News of the Boston Trade

(FROM OUR REGULAR CORRESPONDENT.)

BOSTON, Mass., April 3, 1922.—An exhibition that created much attention and favorable comment this week was held at the John Carter House, under the auspices of the Hampden Glazed Paper and Card Company, represented by W. S. Fowler. The original cover designs submitted in the recent Sunburst Cover Paper prize contest were on display. These original designs have been exhibited all over the country. The exhibition rooms at the Carter House were well filled during the three-day exhibition.

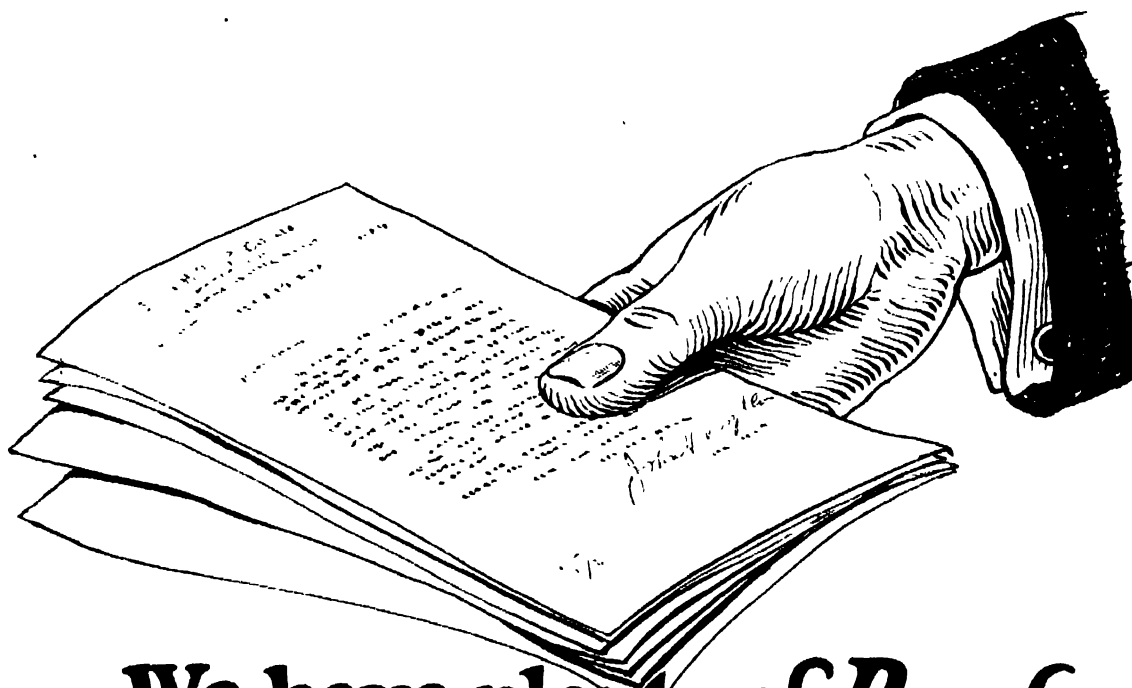
Mr. Hall, treasurer of the Carter House; Max Frank; H. E. Waite, sales manager, and R. B. Pierpont, manager of the Providence branch of the Carter House, will be among a large delegation of leading paper merchants of this city to attend the paper convention in New York next week.

The Dickerman Box Company, of this city, lost heavily in a fire in its plant here this week.

E. J. McDonnell Presented With Gold Watch

Boston, Mass., April 3, 1922.—E. J. McDonnell, for the past twelve years superintendent of the Tileston & Hollingsworth Company, was called to the finishing department of the mill on last Monday, and on behalf of the employees, Maurice A. Duffy, of the office, presented him with a beautiful gold watch, a desk set and a pair of gold cuff-links, the latter being the gift of the mill office force.

Mr. McDonnell's departure from the Tileston & Hollingsworth Company to start the Marr-McDonnell Company at Mt. Holly Springs, Pa., was the occasion which caused the presentation, an exhibition of remarkable attachment that has always existed between the employees and himself. He goes into his new venture with the sincere good wishes of all who know him.



We have plenty of *Proof*-

Let us prove that white water stock can be recovered profitably.

Given: A Bird Save-All.

Proof:

The Bird Save-All automatically removes the valuable fibre from the white water and returns it for profitable use without labor cost.

The Bird Save-All is so moderate in price that the initial investment does *not* offset the savings.

The Bird Save-All is inexpensive to operate; the cost is negligible; the stock recovered is practically clear gain.

Let us cite you a concrete example.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.

Western Representative:
T. H. Savory, Jr., 1718 Republic Bldg.,
Chicago, Ill.

Canadian Builders of Bird Machinery:
Canadian Ingersoll-Rand Co., Ltd.,
260 St. James St.,
Montreal, Canada.

THE BIRD SAVE-ALL

Obituary

John Russell

KALAMAZOO, Mich., March 29, 1922.—John Russell, 70 years old, died Tuesday night, 11:50 o'clock, at the New Borgess Hospital. He has been in poor health since November last.

Mr. Russell, during his years of activity, was prominent in the paper industry of the Kalamazoo valley district. During a long period he was superintendent of the Superior division of the Bryant Paper Company, retiring nine years ago to enjoy a well-earned rest.

He was born in Lancaster, England, and came to America when still a young boy. He has lived in Kalamazoo about 40 years, accumulating a competency for his declining years.

The immediate survivors are the widow, one son, John Russell, Jr., and a daughter, Miss Gertrude Russell.

Bids and Awards for Paper

WASHINGTON, D. C., April 5, 1922.—The purchasing officer of the Government Printing Office has received the following paper bids:

5,000,000 $6\frac{1}{2} \times 10\frac{1}{2}$ " manila envelopes. Sherman Envelope Company, at \$3.02 per M.; Brown Bag Filling Machine Company, \$3.19.

1,400 lbs. $22\frac{1}{2} \times 28\frac{1}{2}$ "—280, white railroad board. Holyoke Card and Paper Company, at \$33.00 per ream; Old Dominion Paper Company, at \$26.32; Mathers-Lamm Paper Company, \$20.25; D. L. Ward Company, \$27.00; R. P. Andrews Paper Company, \$31.25; Carter, Rice & Co., \$35.25.

5,150 lbs. 30×40 —51½, No. 16, map paper, sample B: George W. Millar & Co., Inc., at \$1.625 per lb.; Dobler & Mudge, \$1.875; Old Dominion Paper Company, \$1.15249; R. P. Andrews Paper Company, \$1.7625; Barton, Duer & Koch Paper Company, \$1.7625; The Whitaker Paper Company, \$1.975.

8,000 lbs. $22\frac{1}{2} \times 28\frac{1}{2}$ "—200, manila cardboard: Old Dominion Paper Company, \$0.574 per lb.; Dobler & Mudge, \$0.6; Carter, Rice & Co., \$0.6; Wilkinson Bros. & Co., \$0.611; R. P. Andrews Paper Company, \$0.55; Mathers-Lamm Paper Company, \$0.55; Maurice O'Meara Company, \$0.57.

The Mathers-Lamm Paper Company has been awarded the contract by the purchasing officer of the Government Printing Office for furnishing 33,000 lbs. (160 reams) of 21×32 —210 of manila card board at \$1.057 per lb., bids for which were opened on March 15.

The R. P. Andrews Paper Company will furnish 50,000 lbs. (50,000 sheets) of 26×38 , No. 50, chip board at \$1.06425 per lb., bids for which were opened on March 20.

The Whitaker Paper Company will furnish 3,700 lbs. of 24×38 —74 rope manila paper at \$1.034 per lb., bids for which were opened on March 27.

The R. P. Andrews Paper Company has been awarded the contract by the purchasing officer of the Government Printing Office for furnishing 5,150 lbs. (100 reams) of 30×40 —51½, No. 16, lithographic finish map paper at \$1.473 per lb., bids for which were opened on March 29.

The Bureau of Supplies and Accounts, Navy Department, will open bids on April 18 for 1,000 boxes, 50,000 sheets, of $9 \times 14\frac{1}{2}$ " carbon paper.

The purchasing officer of the Government Printing Office has received the following bids:

3,700 lbs. rope manila paper, 24×38 —74: Maurice O'Meara Company, \$1.043 per lb.; Domestic Mills Paper Company, 11 cents; Dobler & Mudge, \$1.043; The Whitaker Paper Company, \$1.034; R. P. Andrews Paper Company, \$1.038; Old Dominion Paper Company, \$1.07; George W. Millar & Co., Inc., \$1.090.

126,000 paperoid filing jackets, $4 \times 9 \times 1\frac{1}{2}$ " : R. P. Andrews Paper Company, \$15.65 per thousand; J. Josephson & Sons, \$32.50; Typewriter and Office Supply Company, \$21; Keystone Envelope Company, \$19.40; United States Envelope Company, \$28.75 and

\$27; The U. S. Paper Goods Company, \$21.50; The Whitaker Paper Company, \$21.21; Charles G. Stott & Co., Inc., \$26.95; The Globe-Wernicke Company, \$31.62.

50,000 white linen shipping tags, No. 7, $5-13/16 \times 27\frac{1}{8}$ " : Campbell Paper Box Company, \$4.25 per thousand; Dobler & Mudge, \$2.89, \$3.25, \$3.65, \$3.77, \$4.11; Old Dominion Paper Company, \$2.94, \$3.30, and \$3.46; International Tag Company, \$3.84; American Tag Company, \$3.21; The Denney Tag Company, Inc., \$2.78; Dennison Manufacturing Company, \$3.63 and \$4.02; The Whitaker Paper Company, \$3.00, \$3.39, and \$3.56; R. P. Andrews Paper Company, \$2.87, \$3.23, and \$3.37.

Bids will be opened at the Government Printing Office on April 7 for 2,190 lbs. of 21×32 —109½ of salmon commercial ledger paper.

Scandinavian Pulp and Paper Industry Depressed

According to the most recent information available to the Paper Division of the Department of Commerce, the Scandinavian paper industry remains depressed. The kinds of paper which apparently are in best demand are wrapping paper and news print. There are no evidences of recovery in the fine paper market. Generally speaking, it may be said that the chemical wood pulp industry has brighter prospects at present than the paper industry.

In the middle of February an unsatisfactory condition in the paper market in Sweden was reported. At that time, however, the demand for chemical wood pulp was improving. The British paper mills in February were beginning to operate a number of paper machines which had for some time been idle. The demand for pulp for these machines was beginning to make itself felt on the Swedish market. During January and the early part of February a number of minor purchases of Swedish sulphite pulp were made by these British mills. The following prices were obtained:

Bleached sulphite	£20/10 to £23 per ton
Easy bleaching sulphite	£15 to £16 " "
Strong sulphite	£14 to £15 " "
C. I. F. British port.	

In February the Swedish sulphite pulp producers were also experiencing an increasing demand from France, Spain, Italy, and Belgium. The paper manufacturers in these four countries, however, are seldom willing to order more pulp than is sufficient to cover the requirements of the day. They evidently find the political and economic situation too uncertain to negotiate any considerable contracts for gradual delivery throughout the year. However, it is reported that the paper mills in these four countries are now operating at nearly full time; consequently the continuance of a fairly good demand is anticipated.

February witnessed a depression both in the paper and pulp markets of Finland. This last winter was characterized by such bitter, and lasting cold that the ice conditions on the Finnish coast made traffic there difficult. Most of the export business had to be handled through the one port of Hango, with the resulting traffic jam in that port and in lack of business for other Finnish ports. The depressing effect of the difficulties attendant on the ice is shown by the fact that in the middle of February there were in the port of Hango no less than 8,000 tons of chemical wood pulp for export which it had been impossible to ship.

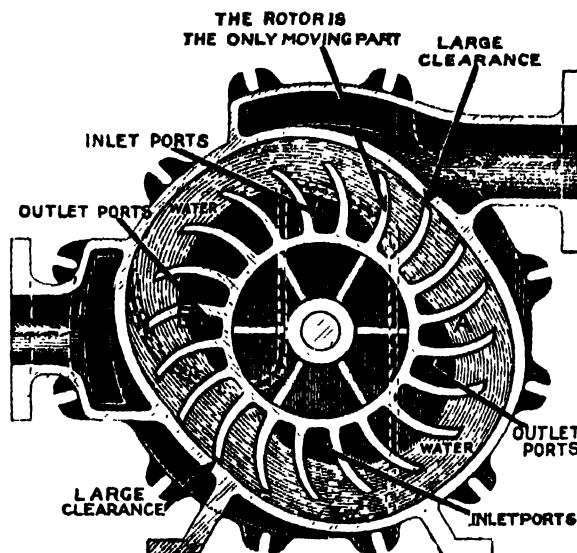
Reports from Norway dated February stated that the paper industry in that country, which for the most part manufactures for export, is working at greatly reduced time. Low prices prevail in the paper market. Wrapping paper and news print are in the strongest position of any kinds of paper. The market for ground wood is very quiet, as is usual at this time of year. There is a moderate demand for chemical wood pulp, although prices are low. The total production of chemical wood pulp in Norway in 1921 was much less than in 1920, being estimated at 150,000 tons compared with 224,000 tons in 1920.

THE HYTOR VACUUM PUMP FOR FLAT BOX SERVICE

Vacuum
Produced
Absolutely
Without
Pulsation

—
No Vibration

—
Saves Wires



Only One
Moving Part

—
No Rods, Pistons,
Crank Shafts
Loose Moving Parts
and No Gears

—
No Expert Attendance

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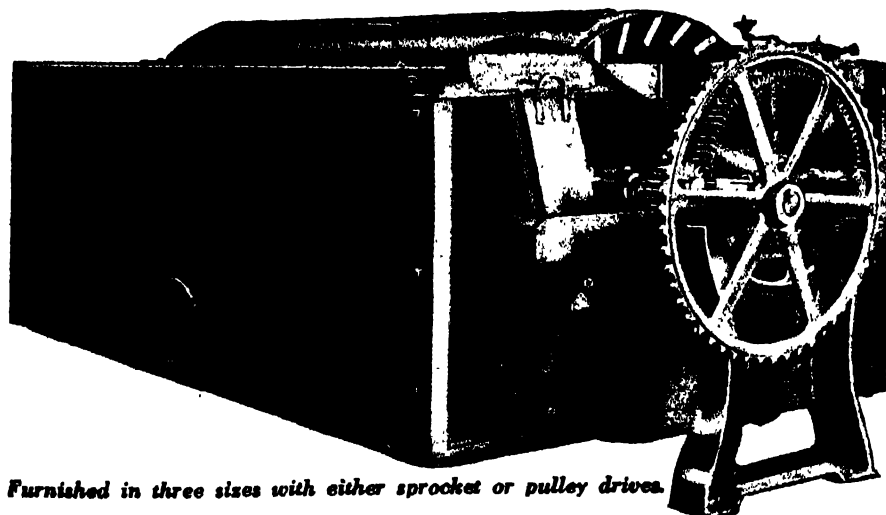
THE NASH ENGINEERING CO.
WILSON POINT ROAD
SOUTH NORWALK, CONN.

New England Representative
G. H. GLEASON
185 Devonshire Street
Boston, Mass.

THE WOOD'S MACHINE

Distinctive performance and intensified confidence in this machine as a Pulp Thickener, Save-All, Washer or Water Filter insure success in its building.

On the market but a few years, our installations number more than **Eighty-five**. **Twenty-nine** sold the past year.



Furnished in three sizes with either sprocket or pulley drives.

MADE BY
GLENS FALLS MACHINE WORKS
GLENS FALLS, N. Y.

Try our Split Cams for your Flat Screens

SIMPLICITY, in cylinder and vat construction, operation automatic, and without couch roll, doctor or any complicated moving parts.

DEPENDABILITY, in its simple revolving cylinder only, with nothing to get out of order, requiring little attention, and having a patented principle of maintaining wires always clean, insuring continuous performance.

PRODUCTIVENESS, enormous, through clean wires, large screening surface, patented unique method of discharge and freedom from shut-downs.

DURABILITY, by rigid construction, ample bearing surfaces, nothing to injure wires and highest grade materials.

All these enhance its value and involve upon you the duty of investigation.

PRACTICAL QUESTIONS AND ANSWERS FOR MILL MEN

A Department for the Solution of the Troubles, Large and Small, That Are Encountered by the Workers in the Mills in the Course of Their Duties in Making Paper and Pulp — All Mill Men Are Invited to Send in Both Questions and Answers—A Free Exchange of Ideas Is Desired — By Active Co-operation This Department Can Be Made a General Clearing House for Information in Regard to Practical Paper Making.

How Long the Wet Felt Should Run

QUESTION No. 2559.—How long should the wet felt run on a machine which is running at an average speed of 190 to 200 feet per minute? Our first felts average three to four weeks and the second felt about seven weeks. We run on a fine grade of book paper.

ANSWER No. 2559.—The lives of your felts are considerably shorter than they should be, for you should get at least a third more wear out of them. A whole lot depends in the first place on whether the felts are the quality that they should be. You must have the best quality of felts to get the maximum wear. It will not do you any good to try to get good long runs on your felts if you are using an inferior grade. If you are using the best felts possible and you are getting short runs, then you must look to your machine for the reason that you are not getting the time out of them that you should. It would be well for you to look over your felt frames and see that your felts are not turning any surplus rolls. Cut out all the rolls that are unnecessary. The more rolls that you are using the shorter the time you can use the felts. Every roll added that is not necessary shortens the wear of your felts. You must never take your felts off of the machine after once they have been put on. Wash your felts on the machine and do not try to wash them and put them back on. If you do this you will weaken the fibers and the loss in wear is very great. When you wash your felts on the machine try washing with a good quality of powdered soap which has been dissolved in hot water. Use about one-half a pail of soap to a barrel of water. Let the felt run in the soap for about five minutes and then run with good fresh water for about twenty to thirty minutes. Rope out and you are ready to run again. When you start up a new felt do not stretch the felt out too tight, for you will take all the life out of it if you stretch the felt out too tight to start with. Do not stretch the felt out until you have put the water on it, for felts shrink considerably after being wet. If you follow the above suggestions you will no doubt lengthen the life of your felts.

Getting Rid of Wire Marks

QUESTION No. 2560.—Can you tell me the best known method of getting rid of the wire mark on a machine using a jacket or couch? I am having this trouble on papers used for book.

ANSWER No. 2560.—Of course your wire marks come from having your couch weighted down too much. You can weight down your couch just enough so that the wire marks will not show, but if weighting still shows it will be necessary for you to discard the levers entirely providing you cannot get the marks out on the presses. Another thing is that if you weight down the couch lightly the web of paper will go into the first press in a moister condition. This gives the first press a chance to obliterate the wire marks and to impress the felt mark or nap. Of course, this is another condition that is not wanted. The first press should be weighted enough to remove all the water possible and at the same time not have the paper crush. The second press should be weighted

lightly provided there is not a third press on the machine. If there is a third press, the second press can be weighted down quite heavily. Then the weighting of the third press will depend upon how the felt and wire marks show.

Again, the coarser the wire the more easily it is to have the paper show the wire mark. A wire should be at least a No. 80 and no coarser. Then the felts should be finely woven. If you have the proper clothing on the machine it is not necessary to have either wire marks or felt marks.

New Marble Paper Machine

After eight years of experimentation M. Rheinauer, inventor for the Anderson Marble Paper Company, has succeeded in constructing a machine which will print marble paper heretofore made only by hand at a considerable expense. The new machine bearing U. S. patent No. 1,405,163 issued January 31, 1921, and other foreign patents will print marble paper in jumbo rolls without stopping.

Marble paper has been made in Europe for upward of 100 years and manufacturers there have been considered to be most expert in the business. Mr. Rheinauer has sent samples of his new product to German manufacturers of long experience in making marble paper and they have reported it to be wholly successful and have placed an order for fifty reams of each of several varieties of the paper made in standard sizes 20 by 25 and 19 by 30.

Freeport Sulphur to Construct New Mine

The Freeport Sulphur Company, New York and Freeport, Tex., awarded contract on March 24 to Dwight P. Robinson & Co. for the design and construction of a complete sulphur mining plant at Hoskins Mound, Tex. Cloyd M. Chapman has been retained by the Freeport Sulphur Company as consulting engineer.

The company now operates a large sulphur mining plant at Freeport, Tex., consisting of four units which were built by Westinghouse, Church, Kerr & Co., which has been merged into Dwight P. Robinson & Co. in the period from 1913 to 1918. This plant contains one of the largest installations of oil-burning boilers in the world.

The new plant is one of several industrial undertakings recently awarded to Dwight P. Robinson & Co. and indicates renewed activity generally in industrial construction.

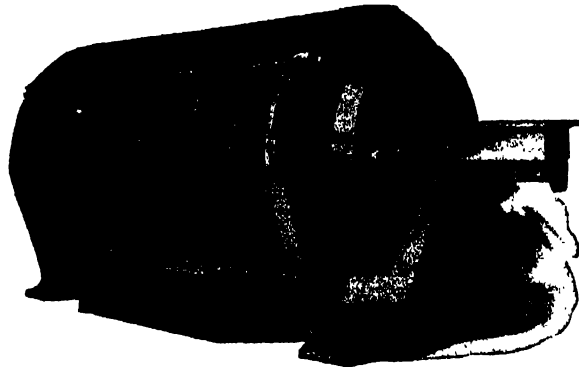
New American Writing Service Houses

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., April 3, 1922.—The Acme Paper Company of St. Louis has recently been appointed an American Writing Paper Company service house. The Carpenter Paper Company of Montana and the Lincoln Paper Company of Lincoln, Neb., have also been appointed Eagle-A service houses.

“IMPCO” TAILING SCREENER FOR SCREENING GROUND WOOD TAILINGS

**Very Low
Power
and
Upkeep Expense**



**Delivers
Rejections Free
from Good
Stock**

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING

WRITE FOR FULL DETAILS

CORRESPONDENCE A PLEASURE

**IMPROVED PAPER MACHINERY CO. Nashua, N. H.
SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA**

WHALEN SULPHITE PULPS

**Made from the SITKA SPRUCE of BRITISH COLUMBIA
Noted for Fibre, Color and Strength**

**SNOWHITE
BLEACHED
SULPHITE**

**GLACIER
EASY BLEACHING
SULPHITE**

**SWAN
STRONG
SULPHITE**

As exclusive Sales Agents for all of the products of the WHALEN PULP & PAPER MILLS, LTD., in addition to stocks at the mills, we will carry large stocks of the above well-known brands in New York, thus insuring prompt deliveries.

Your inquiries addressed to any of our offices will bring prompt quotations by wire.

**CANADIAN ROBERT DOLLAR CO., Limited
VANCOUVER, B. C.**

U. S. ADDRESSES

Robert Dollar Co., Robert Dollar Bldg., San Francisco.
Robert Dollar Co., 15 Moore Street, New York, N. Y.
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FOREIGN OFFICES

Robert Dollar Co.,
Shanghai, Hong Kong,
Hankow, Tientsin,
Ichang, Chungking, and
Pekin, China; Kobe,
Japan; Calcutta, India;
Manila, P. I.; Singapore,
S. S.

New York Trade Jottings

W. E. Byron-Baker, chemist for the York Haven Paper Company, York Haven, Pa., is in town this week on company business.

Linton & Co., of 537 South Dearborn street, Chicago, have opened a New York sales office at 2262 Woolworth Building, New York City.

Perkins-Goodwin Company announce that Frank E. Dunaway, well-known in the trade, has become a member of their Pulp Department.

Edward Montreuil, of E. & M. Lamort, France, is visiting this country in the interests of the "Marcel Lamort" rotary screen for paper mills.

International Paper Company declared the regular quarterly dividend of \$1.50 a share on the preferred stock, payable April 15 to stock of record April 7.

Ray S. Hatch of the Hammersly Manufacturing Company, Garfield, N. J., has returned from a cruise through the Caribbean and the Panama Canal, and will be in New York Thursday, April 6.

A dinner meeting at the Union League Club of the finance committee of the American Paper and Pulp Association was held Tuesday, evening, April 4, to prepare a financial report for the Association.

J. H. O'Connell, president of the American Pulp and Paper Mill Superintendents Association, will be in the city the week of April 10 to attend the Annual Convention and the meetings of the Technical Association in particular.

The Wilson Paper Stock Company, dealer in all grades of waste paper, removed, April 1, from 367 West 12th street, 241 West 17th street, and 136 West 18th street, to new quarters and warehouse at 452-454 West 19th street.

Texas Gulf Sulphur has a large stock of brimstone—over 1,000,000 tons above ground, and is now producing about 1,500 tons daily. January shipments were over 50,000 tons. Sales are running at approximately 400,000 to 500,000 annually.

The Frank L. Scott Company has resigned the Eastern sales agency of the Oval Wood Dish Corporation, taking effect March 31, 1922. The new Eastern sales office will be at 2262 Woolworth Building, New York City. The address of the Chicago office remains the same—537 So. Dearborn street.

O. M. Porter, of the American Paper and Pulp Association, spent a few days the first of the week in Springfield, Mass., in conference with association officials making plans for the convention meetings of the Glazed and Fancy Paper Manufacturers Association and the Gummed Paper Manufacturers Association.

The Seymour Company which has occupied the corner of 24th street and 7th avenue for eleven years, has purchased the property at 323 to 327 West 16th street which it will occupy after improvements have been made. The six-story building and basement has a frontage of 75 feet and 26,000 square feet of floor space.

Nicholas J. Barrett, 500 Broome street, has just concluded for the Estate of Thomas Barrett, of which he is sole trustee, a long-term lease on 566-568 Seventh avenue, Times Square district, and 105th street and Third avenue, on a net annual rental basis. The amount involved is about \$1,250,000 in rents. Extensive alterations will be made to both properties by the new tenants.

Frank H. White, of 100 Hudson street, New York, manager of the White-Washburn Company, Inc., with which he has been connected for many years severed his connection April 1, 1922. He is now associated with and will represent the Wallabout Paper Specialties Corporation, 516 Fifth avenue, room 805, telephone, Vanderbilt 3581. The corporation is manufacturer of toilet paper.

The play, "The Spirit of Conservation," given last Monday at Selwyn Theater, by the New York City Federation of Women's Clubs, as a part of the Forest Conservation Week Program was carried off in excellent style and considered to be a great success. O. M. Porter, W. B. Bullock, and Dr. Hugh P. Baker, of the American Paper and Pulp Association, took active parts in the play.

The program for conservation week, heartily endorsed by Governor Miller, includes an address on Great American Conservationists and Naturalists, to be given at the Hotel Astor, April 7 at 2 P. M., and a discussion of Conservation and Nature Study for Children, to be held April 8 at 10:30 at the Children's Museum, Brooklyn. Good speakers, music, and moving pictures are on the program for both days and admission is free.

Union Bag and Paper Corporation will employ funds derived from the new bond issue of approximately \$7,000,000 in taking care of maturities of around \$2,500,000 and to finance some badly needed plant extension. Balance sheet at end of December, 1921, showed working capital of \$1,600,000 against \$4,600,000 at the end of the preceding year. However, the company has passed through the depression and is now gaining steadily.

The Fernstrom Paper Company, 150 Nassau street, New York City, has filed papers of incorporation. It is a selling organization for different Scandinavian Paper Mills and Fernstrom & Co., A/B, General Paper Exporters, Stockholm. It is dealing in M. G. and Unglazed Kraft paper, M. G. and unglazed sulphite paper, greaseproof, glazed and unglazed news print and other kinds of paper manufactured for export in Norway, Sweden and Finland. The Principals are Charles Fernstrom, president and treasurer, Jan Liebig, secretary.

The Kalbfleisch Corporation, producers and distributors of paper making materials, will move their executive offices from 31 Union Square to the 200 Fifth Avenue Building on May 1. Although the Corporation has been well situated at Union Square for 17 years, it is deemed expedient at this time to transfer to the building which is now without question the most important paper center in the Metropolitan district. From the time Morton Kalbfleisch organized the business in Brooklyn some 100 years ago its history has been one of advancement. The Kalbfleisch Corporation owns at present five different plants throughout the country and will by its strategic removal in May pass another mile stone along its progressive course.

D. H. Newell To Go With Crocker-McElwain

HOLYOKE, Mass., April 3, 1922.—D. H. Newell, it is announced, will shortly become connected with the Crocker-McElwain Company of this city.



CUT down excessive wrapping paper investment. Why carry two wrapping paper lines for one wrapping paper purpose?

MOSINEE

presents a perfect wrapping paper, weight and strength for each wrapping purpose. Made in all weights, from 15 lb. to 100 lbs. basis. The one complete, standardized and economical line of wrapping paper sold.

MOSINEE KRAFT

"The Wrapper That Delivers the Goods"

ALVAH MILLER, Pres. TOM T. WALLER, Vice-Pres.
NATH'L L. MILLER, Secy-Treas.

**Craig-Becker
Company**
INC.

**Domestic and Foreign
Ground Wood and
Sulphite**

52 VANDERBILT AVE.
NEW YORK CITY



PAPER

*'It more than Wraps.
It Advertises'*

"AdPax" will be the
most talked about
Wrapping Paper line
in the country.

FRED C. STRYPE
320 Broadway, New York

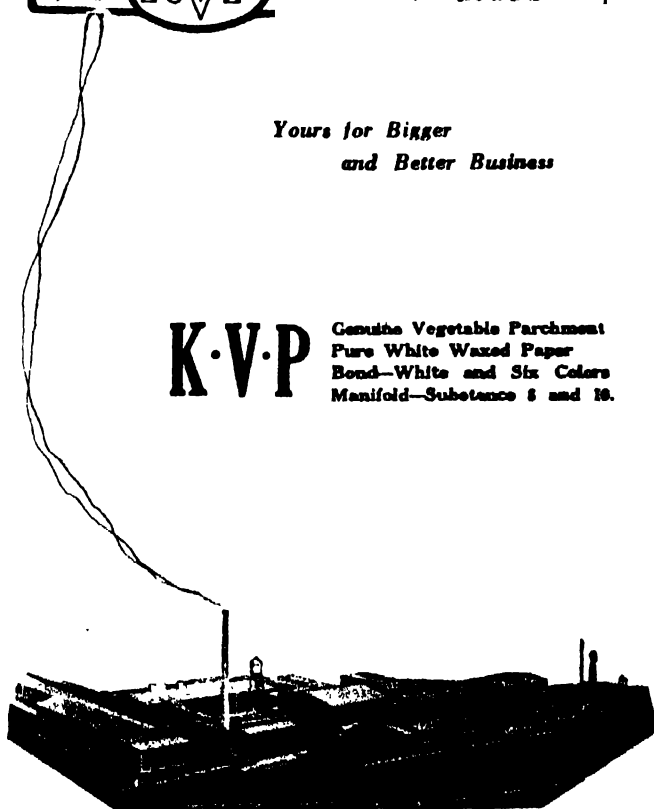


Kalamazoo Vegetable Parchment Co.
Kalamazoo, Michigan, U. S. A.

*Yours for Bigger
and Better Business*

K·V·P

Genuine Vegetable Parchment
Pure White Waxed Paper
Bond—White and Six Colors
Manifold—Substance 8 and 10.



GUMMED CLOTH SEALING AND BINDING TAPES

By C. H. CROWELL, PRESIDENT, GUMMED PAPER MANUFACTURERS' ASSOCIATION.

For a decade or more many of those interested in the subject have devoted much time and effort in study and experiment to determine the best construction of woven fabrics for binding purposes and a proper and reliable test to accurately determine quality.

For the purposes for which this material is used, it is manifest that the strength of woof threads is the sole determining factor. Many ideas have been advanced and many attempts have been made to regulate or standardize the quality. Perhaps all will agree that up to the present no practical and satisfactory solution of the problem has been found. For many years our company has spent time and money unstintingly in an effort to accomplish some real results of benefit to the industry.

Results of Experiment

The following are the results of our experience:

First: The well-known puncture test has proven to be utterly inadequate to determine the strength of cloth tape for binding purposes. This is due primarily to the fact that up to the present time the best-known apparatus for making the puncture test must necessarily break the warp threads which, in the ordinary woven fabrics, are very much stronger than the woof threads. The value of binding tape depends solely upon the strength of the latter threads.

Cloth tape produced from the common print cloth construction, counting 64 x 60 threads to the inch, will test approximately 70 points puncture test, and a first quality 60 lb. gummed Kraft paper tape will test the same.

Second: There are many different types of apparatus for determining the tensile strength, but the varying results obtained from different machines are quite disturbing. It would seem, however, that the tensile strength test is of some value, inasmuch as the warp and woof threads can be tested separately. Nevertheless, it is doubtful if this method is of real practical value for many purposes, for it is seldom that pressure is brought to bear on binding tape in the manner in which the strain is exerted by the tensile strength-testing machines.

Why This Testing Is Not Accurate

In our opinion this method of testing for strength does not produce accurate results, because:

(1) A tensile strength test of a 60 lb. gummed Kraft paper lengthwise the grain, will test approximately 40 per cent more than the woof threads of a 64 x 60 gummed cloth tape.

(2) Bearing in mind these two grades of cloth and paper tapes, it is undoubtedly true, as a matter of practical experience, that paper tape will never stand the strain of the cloth tape for binding purposes. This is evidenced by the fact that the cloth tape is uniformly used instead of paper, although the cost of the latter is approximately only one-sixth of the cost of cloth.

(3) A tearing strength test of the woof threads of a 64 x 60 lb. gummed cloth tape is approximately 100 per cent greater than the tearing strength test lengthwise the grain of a first quality 60 lb. gummed Kraft paper tape.

Conclusions That Follow

The following conclusions follow irresistibly:

(a) The puncture test proves nothing, because it does not test the woof threads which are the only determining factors of strength.

(b) While it is undoubtedly true that a tensile strength test of woof threads has some significance, nevertheless, woven fabric must be specified. Therefore, it follows that the tensile strength test does not adequately meet the requirements.

(c) The tearing strength test, lengthwise the material to be used, properly and adequately determines its strength for binding purposes.

In our opinion, either cloth or paper binding tape seldom breaks from having a pressure exerted uniformly over a substantial length of the material. The actual giving way is caused by a small puncture or break, following by a pressure or strain which tears the material.

Therefore, it is clear that the question of the adoption of the tearing strength test should receive serious consideration, even though, in the case of a woven fabric, the number of threads per inch must be specified in addition to the specification for strength test. The latter question is one that must be determined by practical experiment.

Recommendations

We have long maintained these views. In 1917, our company made the following recommendations:

In order to designate the medium grade, we recommend the following specifications as the standard:

Cloth tape to have not less than sixty filling threads to the inch of size not less than No. 38.

For the heavy grade, we recommend the following specifications as the standard:

Cloth tape to have not less than forty-eight filling threads to the inch of a size not less than No. 20.

At this time there had not been any testing machine brought to our attention for determining the tearing strength.

Therefore, we suggested the most practical method under the circumstances. It has long been our contention that, inasmuch as the woof threads are the only determining factors, the number or size of warp threads should not be specified.

No Logical Objections

There seems no logical reason for objecting to this point of view inasmuch as it is absolutely necessary to have a sufficient number of warp threads to hold the woof threads in proper position during the filling and dyeing process, and also to provide the necessary strength to carry the material through the machinery without breaking under the process of finishing.

It is obvious that no greater number of warp threads than this is needed for binding purposes. Specifications calling for more warp threads than is necessary is plainly uneconomical.

Some time ago there was placed on the market at such a moderate price, as to be within the reach of all, a scientifically constructed apparatus for registering the tearing strength test of fabrics. We are demonstrating to the trade a method of making a comparative hand-tearing strength test which requires only a desk rule or straight edge and a pocket knife or cutting blade. It is so simple as to be unquestionable and its accuracy instantly recognized.

Finally, can there be any logical reason why all interested parties should not use their utmost efforts to have the tearing strength test adopted as a standard, especially in view of the fact that both a scientifically constructed instrument for tearing and a simple hand method, free to all, is available?

The term "filling threads" means "woof threads," according to the custom of the trade.

Denies Rehearing in News Print Case

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., April 5, 1922.—The United States Court of Customs Appeals has denied the petition of B. R. Lawrence for rehearing in Docket 2100 in the case of the United States against himself in connection with the importation of news print paper.



Nilsen, Lyon & Co., Inc.

140 Nassau Street

New York, N. Y.

WOOD  **PULP**

Exclusive Representatives United States, Canada and Mexico for

Diesen Wood Company
WIBORG FINLAND

Manufacturers of
Superior Quality Easy Bleaching and Bleached Sulphate Pulp

An exceptionally strong, clean fibre at a moderate price

Write for Samples and Quotations

Stocks carried at Baltimore and Boston for Prompt Shipment

E d i t o r i a l

Vol. LXXIV New York, April 6, 1922 No. 14
FIFTIETH YEAR

Signs of Spring

In proper keeping with the slow shift of winter into spring business itself is thawing out under the persistent urge of the warm economic sun whose rays are slowly coming to bear more directly on the country's industry. The paper business is no exception to the rule of improvement, and so confidence and optimism grows because mills are more active, more machines are running, and plants closed for a long time are again in operation.

Paper men do not have to refer to generalities for proof of betterment. They have facts and figures before them to clinch the argument. Not the least significant of the data showing the strengthening of the market are figures of news print consumption that have lately come to hand. Since news print is the leading factor in the industry, changes in it are indicative to a large extent of improvement or retrogression throughout the entire field. It is very significant that more news print has been consumed in the last December, January and February than was ever consumed in those months heretofore. What is more convincing is that January and February's consumption is an index, fair in every way, for the year's total consumption. In the past five years news print consumption during those two months has varied little from 16 per cent of the total consumption for the year.

The remarkable push back of the news print activity is occasioned in large measure by the large metropolitan dailies whose editions are larger than ever before. In February, 1921, the average edition of 62 of the metropolitan dailies in 21 cities was 21 pages and increased to 23 pages in February, 1922. The average Sunday edition contained 77 pages in February, 1921, and 85 pages in February, 1922, showing an appreciable increase.

While production of news print is gaining throughout the North American continent, publishers are eating rapidly into their stocks, which, if the present demand continues, will soon be as low as in 1920, when a burst of activity struck the market. There is a strong tendency on the part of the phenomena present during the 1920 boom to assemble again, and in anticipation of somewhat similar, yet milder and more lasting results, the news print trade is prone to assume an optimistic attitude.

Not only has consumption this last January and February exceeded that in those months in the greatest previous year (1920), but each month has outstripped the last in steady progression.

January, 1922, consumed 6.5 per cent more news print than January, 1920, and January, 1922, did still better, according to Federal Trade Commission statistics.

February, 1922, consumed 6.8 per cent more than February, 1920, taking into consideration that the latter month contained 29 days on account of leap year.

January, 1922, consumed 10.4 per cent more news print than January, 1921, while February, 1922, consumed 10.7 per cent more than February, 1921, again showing a progressive increase.

January and February, 1922, together, consumed 6.7 per cent

more news print than January and February, 1920, still remembering that February, 1920, had 29 days.

January and February, 1922, together, consumed 10.6 per cent more than January and February, 1921.

The figures upon which the interesting percentages are based are taken from the monthly report of the Federal Trade Commission on United States publishers of publications with circulations of 5,000 or over, representing 92 or 93 per cent of the total consumption of standard news print of the United States.

Since news print is such a large factor in the paper business, its betterment can only indicate that general conditions are working out for the good of the whole industry. Therefore, there is a substantial basis for the growing belief that the paper line is out of the shadow and subject once more to the comforting rays of a sunny era. As a general thing morale has held up well under the colossal strain of depression, but a lack of snap has been apparent everywhere. Now it appears that at last, in reward for patience and long suffering,—not to say hard and tormenting work,—spring has come again in the paper field.

Foreign Paper Prices Declining

The import price of news print for January continued to show about the same average decline that it has been showing for some months past, according to figures just issued by the Department of Commerce. The average price per pound for the month was \$.036, as compared with \$.0382 for December and \$.0635 for January of last year.

The monthly average import price per cord of pulpwood for January was \$10.51, as compared with \$10.70 for December and \$15.88 for January, 1921.

The monthly average import price per ton of groundwood for January was \$25.18, as compared with \$25.80 for December and \$62.75 for January of last year.

The monthly average import price per ton of unbleached chemical pulp for January showed a slight increase over December, the figure for the former month being \$55.64 and for the latter, \$54.04. The price for January a year ago was \$128.93.

The monthly average import price of bleached chemical pulp per ton, on the other hand, continued to decline, being only \$80.15 for January, as compared with \$82.70 for December and \$184.70 for January of last year.

The monthly average export price per pound of news print for January was \$.043, as compared with \$.045 for December and \$.08 for January of last year.

The average monthly import price per ton of wood pulp for January was \$56.90, as compared with \$58.72 for December and \$95.85 for January of last year.

Business Making Rapid Recovery

Figures received by the Department of Commerce indicate that business is still making progress in its recovery from the memorable depression of 1921. Progress in business rehabilitation needs to be cautious that it may be built upon a firm foundation. Some backsets may be expected for all of the lesions caused by post-war over-expansion have not healed.

Although in most lines prices have been relatively stable for the past six months, distributors still remember the disaster caused by overstocked shelves in 1920. Forward orders, therefore, are given sparingly and in reduced volume; however, manufacturers are feeling the effect of repeat orders, and the steadily increasing output of mills and factories shows that fundamentally the country is getting back to normal.

Although the recent marked increase in the price of farm products has had a big effect upon the morale of the agricultural districts, not much of this has so far been translated into increased business. Most of last year's crops had left the farmers' hands before the rise came; the increase is, therefore, chiefly a promise of better things to come.

The farmer is inclined to wait and see, both as to whether the price holds and how the crop promises before making further commitments.

German News Print Statistics

BALTIMORE, Md., March 28, 1922.

Editor, PAPER TRADE JOURNAL:

In your issue No. 1, dated January 5, 1922, appeared an article regarding the proposed duty on foreign news print paper, which called forth some vigorous protests on the part of our German paper manufacturers, and as some of the statements made by Col. Haskell do not exactly agree with the facts, our principals, the *Verband Deutscher Druckpapier Fabriken*, Berlin, commonly called the Syndicate of Trust, very naturally take exceptions to several points and authorized us to reply as follows:

"Col. Haskell is talking about a direct or indirect subsidy granted the German factories by the government. This is not the case.

"Col. Haskell further is badly mixed up in his figures regarding the exportation of news print paper from Germany to the United States. During the month of December, 1920, according to his testimony before the Senate Finance Committee at Washington, the importation amounted to 14,206 tons, while the German Syndicate gives the official figure as only 24,467 tons for the whole year of 1921.

"Our principals also take exception to the statement that German news print paper was sold below \$50 per ton, c. i. f. New York and other Atlantic ports.

"The German Government is practically a partner in every German industrial enterprise, and there are established minimum prices for export which must absolutely be adhered to, otherwise the export permit will be withheld. We know from our experience that factories have sold news print paper at a price below the government export price, but this paper could not and was not delivered. It is possible, however, that lower offers were made by some German dealers, especially when gambling with the exchange, but these dealers could not, cannot and will not get the export permit if they cannot prove to the satisfaction of the government that the official export price is obtained, and this latter price is never much below the quotations of our own American mills.

"If Col. Haskell says that a yearly contract of 50,000 tons was placed in Germany, we surely ought to know this, as we control the exportation of news print paper. We, however, did not receive such an order. It is further not according to facts that Germany has obtainable for export a quantity of 230,000 tons of news print paper. This amount almost equals the total yearly production, at present about 360,000 tons, and our factories naturally have to take care of the quite considerable requirements of the home market before allocating any tonnage for export.

"The so-called German danger is painted again in the darkest colors.

"Also, the statistics covering the German cost of production are

given in misleading figures and cover a period of many months, say, about last spring. In the meantime same were more than doubled.

"The German mills do not get any pulpwood from the government forests; to the contrary, the prices of their raw materials are going higher and higher from day to day. Of course, everybody knows that Col. Haskell had the one object in view of convincing the Senate Committee of the advisability, or even the necessity, of putting an import duty on foreign news print paper, this notwithstanding the fact that the so-called German dumping danger is non-existent.

"In fairness to the German manufacturers, and also to the importers, we consider it our duty to bring above corrections before the Senate Committee and the public in general. It will give everybody an entirely different aspect of the production capacity of the German paper mills and of their intentions. The German share in the importation of news print paper can never amount to much and can under no circumstances have any appreciable influence on the domestic market. It can never reach the proportions of Scandinavia and Finland, as these countries have far better possibilities to extend their export business. The importation of German news print paper will always form only a small proportion of the entire European importation and should never cause serious apprehensions to anybody in the United States."

We might add that according to the reports of our customers, Col. Haskell is making his appeal with rather a bad grace considering the tremendous advances of the price of spot paper during the recent years, which surely were out of all proportion to the cost of production.

The German paper at the time of our first importations was sold at from \$180 to \$200 per ton, a price that every domestic factory could easily compete with, and if Col. Haskell called a still higher price, "a fair market price," his statement certainly does not meet with the approval of his customers.

The writer was the first one to import the German paper and one of the first ones to handle Scandinavian paper in this market, and everybody only remotely connected with the paper business knows very well that the International Paper Company would never have dreamed of reducing the price if the writer had not in the fall of 1920 thrown on the American market some thousands of tons of his foreign paper.

ALBRECHT-HERD COMPANY, INC.,
HUGO P. F. ALBRECHT.

Paper Merchants to Meet With Manufacturers

The convention of the American Paper and Pulp Association on Thursday, April 13, will be open to the members of the National Paper Trade Association, as a result of the precedent established at the business conference in Chicago last fall. The joint conference was found to be so productive of a better appreciation of the problems of the manufacturers and merchants by each, that the American Paper and Pulp Association has extended an invitation to the merchants' organization to attend the general sessions of the manufacturers on Thursday of Paper Week.

As a result, the formal notice of the National Paper Trade Association is including a special notice to the merchants of the discussion of conditions in the industry by Messrs. Dodge and Crocker which will feature the forenoon convention of the manufacturers. The National Paper Trade Association will have as busy a program during the week as is provided by the manufacturers, but the Thursday forenoon session has been left open for the merchants to attend the manufacturers' meeting.

An additional speaker has been added to the banquet program for the American Paper and Pulp Association, to follow United States Senator Frank B. Willis. Edward James Catell, City Statistician of Philadelphia, will be the additional speaker, and those who have heard him say he has unusual ability in holding the attention of banquet audiences.

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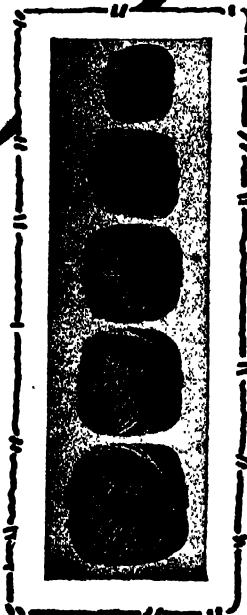
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Conducted by W.G. Mac NAUGHTON, Secretary

THE ORIGIN OF SO-CALLED "MILDEW" INJURY TO PAPER MAKERS' FELT

From the Research Laboratory of F. C. Huyck & Sons, Albany, N. Y.

By JEAN MAC INNES.

Manufacturers of paper makers' felts frequently have returned to them, for replacement, or for an allowance on the purchase price, felts which have developed spots variously known as "rust" or "mildew," or sometimes as "acid spots." In many cases the fabric in the areas affected has become rotted and quite unfit for use. Since all felts are carefully inspected, such spots must form during storage or transportation. The author was given the problem of finding the cause of these troublesome spots, and of devising methods for the prevention and control of this "wool disease," since that is what it has proved to be.

How Experimental Study Was Carried Out

The experimental study was carried out as follows: Pieces of the wool fabric were placed in separate vessels under controlled conditions of temperature and moisture. No true "mildew" (which is a term for fungi, such as form on mouldy bread) appeared on any of the specimens. However, after some time the samples of moist wool developed a brown color, in sharp contrast to pieces of the same fabric which were kept under similar conditions, except that they were kept dry. Accompanying the discoloration of the wool the liquid in the container became white and milky. Under the microscope this liquid was found to be swarming with bacteria. Some of this milky liquid was dropped into tube of nutrient material, on which bacteria will grow and multiply, and several different organisms were found to be present. With the aid of the usual technique of the bacteriologist, these different strains of bacteria were separated from each other and "pure cultures" containing one of the number of types of bacteria present were obtained. Samples of sterilized wool were then inoculated with each of these varieties of bacteria. By this means it was found that only one of the various kinds of organisms which were present was capable of bringing about discoloration. It seems certain then that the bacteria is at least one, and possibly the only, cause of the color on wool known as "rust" or "mildew."

Bacteria Characteristics

It was then of interest to find some of the characteristics of this particular kind of bacteria, since these lead to its identification; and suggest methods of controlling its development. The organism was, therefore, allowed to grow in a large number of different substances and at different temperatures. A study of these reactions, accompanied with use of the microscope, show the organism to be very

close to the *Bacillus mesentericus*, which is harmless so far as human beings are concerned. The particular species under investigation has apparently not been described in the literature.

Under certain conditions the organism produces a large number of "spores." These differ from the ordinary bacterial cells in that they are thick walled and are consequently very resistant to drying and to high temperatures. For instance, the spores were not killed

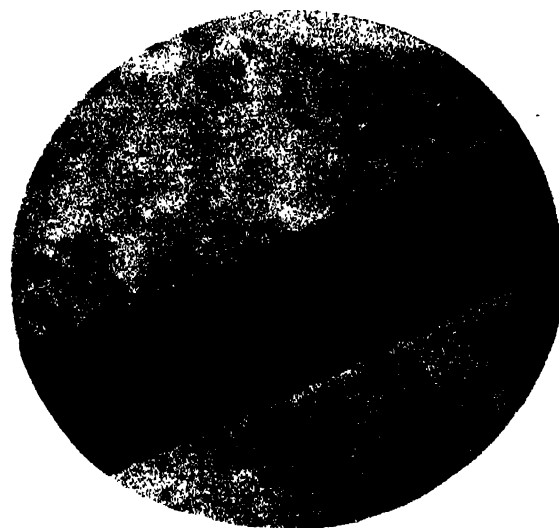


FIG. 1.
Fiber attacked by bacteria, showing absence of scales.
(About 1,400 diameters.)

after being exposed to boiling water for ten minutes. They were killed, however, at somewhat higher temperatures. That the organism is very resistant to drying is shown by the fact that it is found to be alive on pieces of wool which have been kept dry for many months. This is of practical importance since, unless extreme measures are taken, the spores will develop into bacteria, which will attack the wool, as soon as moisture and temperature conditions are favorable.

When fibers from the "rust spots" formed by this organism are

put under the microscope, the scales which are characteristic of wool fibers are found to be removed, as is shown in Fig. 1, which is reproduced from a photomicrograph giving a magnification of about 1,400 diameters. For comparison, the normal wool fiber is shown on the same scale in Fig. 2. It is probable that the bacteria remove the scales from the fiber by dissolving the gelatinous substance which holds the scales to the rest of the fiber.

After the attack has proceeded further and the scales are removed, the little "fibrils," of which the main part of the fiber is composed, are separated from each other. When the fibers are attacked at their free ends the fibrils spread out in a brush-like formation under the microscope, while those attacked along the length of the fiber have the appearance of a splintered piece of wood. Both these effects are shown in Fig. 3. If the attack of the bacteria continues long enough the wool fiber will be completely disintegrated into these small splinter-like fibrils. This splintering effect seems to be quite characteristic of the bacterial action. We have never observed this effect with healthy wool fibers, and it does not seem to have been described by other observers.

We do not know how extensively the spores of this bacteria are distributed on wool, but all samples which have been put under the conditions which are favorable for the development of the organism have given the characteristic browned appearance and the disintegrated fibers. It seems probable that the spores of the organism are nearly always present in wool, but that the disease progresses only when the moisture and temperature conditions are favorable for it.

Conditions Under Which the Organisms Grow

Some experiments were made to determine the conditions under which the organism grows most rapidly. It was found that it would

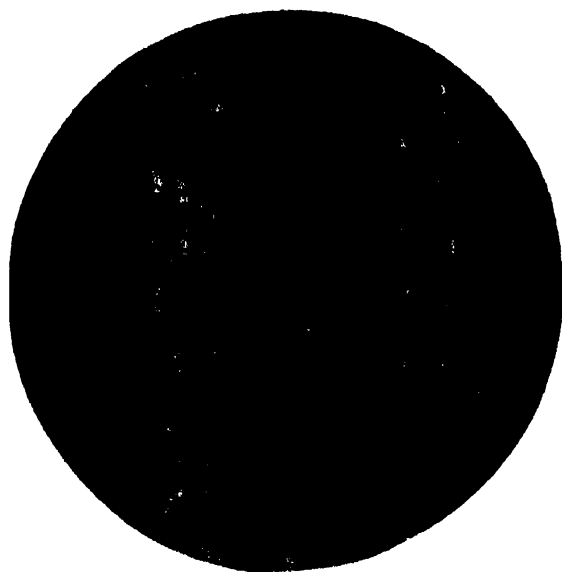


FIG. 2.
Normal fiber with scales.

grow at temperatures from 50° F. to 98° F., but that it developed much more rapidly at 98° F. than at the lower temperatures. It is likely that the organism will grow still more rapidly at somewhat higher temperatures than this if the wool is not kept dry.

How the Trouble Can Be Avoided

Possibly the most important fact about the bacterial growth is that the moisture is necessary for its development. Samples of wool kept for long periods at 98° F. remained perfectly normal if they were dry. Briefly, the disintegration proceeds most rapidly when the wool is damp, but not wet.

Some work was done in an effort to find a method of sterilizing the wool, but no very satisfactory results were obtained, since any of the procedures tried which would kill the spores of the organism were injurious to the wool. No extreme measures are at all necessary, since the trouble can be entirely prevented if the fabric is stored in a dry place, at moderate temperatures. Felts in storage



FIG. 3.
Fiber attacked by bacteria showing brush-like ends, and splintered appearance
(About 500 diameters)

should, therefore, be kept away from brick walls, from concrete floors and walls and from steam pipes. Also, they should not be placed where pipes carrying cold water are overhead, since water drips from such pipes whenever the humidity is high.

Paper Industry Leads in Business Symposium

The paper industry has led all other industries in the presentation of the problems of the paper industry in a symposium which has been printed in daily instalments in the *New York Evening Post*. Several secretaries of paper associations have discussed various features of the trade association problem, the discussion being based on the developments in Washington, where Secretary Hoover is endeavoring to secure wider recognition for the trade association as a factor in the promotion of American business.

Secretary Hoover himself led the discussion, which began March 20, and was followed by O. B. Towne, secretary of the Waxed Paper Manufacturers' Association, and other similar groups in the paper industry. Mr. Towne is a member of one of the important committees of the American Trade Executives' Association. R. S. Kellogg was another to discuss trade association work, showing how the News Print Service Bureau, of which he is secretary, co-operates with the consumers of the product of those mills.

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, told of the experiences he has had at Washington since coming to the paper industry, and advocated a better recognition by the government of the place of the trade association in industry. E. H. Naylor, secretary of the Fine Paper Associations, whose book on trade association work is a text book for trade association executives, was the fourth of the group of paper secretaries to appear, all four discussing widely different phases of the whole big problem.

Another of the series was Hon. Henry A. Wise, who has been counsel for several associations in the paper industry, as well as other industries.

THE DETERMINATION OF SIZING QUALITY

A Preliminary Report on an Investigation of Methods Used for the Determination of Sizing Quality¹

By FREDERICK T. CARSON,

PAPER SECTION, BUREAU OF STANDARDS

Introduction

The determination of the sizing quality of paper is at once an important problem and a difficult one. Aside from the importance of a satisfactory test upon which to base specifications for sizing quality, a reliable test method would be of practical value both to manufacturer and consumer in that it would admit of experiments to determine the least amount of sizing materials necessary to produce a given degree of sizing quality. The advantage to the manufacturer is obvious, but another and more important fact, perhaps, is that sizing materials in excess tend to cause deterioration in paper. Moreover, it is a matter of common knowledge among those who have had experience in the testing of paper that the amount of sizing materials in a paper does not necessarily give any definite idea of the degree to which that paper will resist the absorption of ink or other liquids. The importance of investigating the merits of the various methods designed to determine sizing quality will be apparent from an examination of the results tabulated below which were obtained by several paper laboratories on seven samples recently sent out for comparative tests of methods in common use.

In the following tables the samples are graded from 1 to 7 in descending order of sizing quality. A and B divide samples into three groups according to weight or thickness (H — heavy, M — medium, L — light) and grade only within these groups. The classification is not continuous and, therefore, cannot readily be compared with C, D, E, and F. B (2), and E (2) divide into three groups according to sizing quality. C divides into five groups according to sizing quality and is sufficiently continuous for comparison with D, E, and F, in second table.

The second table is a comparison of the results of the four laboratories which make continuous ratings. Agreement of results would be indicated by horizontal lines.

Ratings are based on results from methods as follows:

A, flotation on ink and acid and conductivity methods; B, (1) flotation on acid solution, (2) pen and ink test; C, ink penetration and conductivity method; D, ink flotation; E, (1) Stöckigt method, (2) average of ink streak, Sammet and Stöckigt; F, ink flotation.

TABLE 1.

B.S. No.	A		C		D	
		1			Time Sec. 1	Time Sec.
4967.....	1M	1M			96	5 360
4969.....	2M	2M			357	5 960
4971.....	3M	3M			38	6 260
4972.....	4M	4M			53	4 420
4974.....	1L	1L			8	7 165
4975.....	2H	2H			85	3 840
4981.....	1H	1H			326	2 900

TABLE 2.

B.S. No.	Description	Weight 25x40	
4967	White writing	84	
4969	Fine bond	84	
4971	White bond	84	
4972	White bond	84	
4974	Thin bond	30	
4975	White ledger	98	
4981	Commercial ledger	98	

Slight differences in results could not be considered serious, since the sizing quality of all the samples is of the same order of

¹Acknowledgment is made of many helpful suggestions given in the early stage of the investigation by Dr. L. H. Adams, of the Geophysical Laboratory of the Carnegie Institution. Published with permission of the Director of the Bureau of Standards, Washington, D. C.

magnitude. But such gross discrepancies as the above tables indicate emphasize the importance of an investigation of test methods.

While the present investigation is by no means completed it seems desirable to publish a progress report in view of the many inquiries made and the general interest manifested in the problem.

Discussion of Test Methods in Common Use

"Though the 'sizing' of paper may appear to be a simple process of adding substances of certain water resisting quality, which quality they communicate to the paper, the experienced paper maker recognizes it as a really complicated result, influenced by a great number of factors." The resistance of paper to the absorption of ink and other liquids, the property which the various methods in use are intended to measure, depends, therefore, upon a large number of factors. The principal one of these—the size added—gives the name to the property according to the usual nomenclature. "Sizefastness" and "sizing quality," although used somewhat loosely, are commonly applied synonymously to that quality of paper by virtue of which it is capable of resisting to a greater or less degree the absorption of ink, water or other liquids having no solvent action upon the sizing in paper. These terms are, perhaps, unfortunate in this connection and might be supplanted to advantage by a more comprehensive expression.

From the very nature of the case the rate of absorption of a liquid by paper is an inverse measure of its resistance to the absorption of the liquid, i. e. "sizing quality" and absorptive quality are reciprocal quantities. It is possible, therefore, to define "sizing quality" in terms of the amount of liquid absorbed as follows: The relative "sizing quality" of paper is inversely proportional to the volume rate of absorption per unit area of surface of paper for equivalent conditions of penetrability² of liquid and of external influences affecting the penetrability³ of paper.

Methods ordinarily used for the measurement of the volume of liquid absorbed by a porous body are not applicable to paper on account of the thinness of the sheet and the small volumes to be measured. It is necessary, therefore, to resort to more indirect methods of measurement. The various modifications of the flotation test, which consist of noting the time required for a liquid to penetrate through the sheet as judged by the depth of color produced by interacting solutions applied to opposite sides of the test samples, are open to serious criticism. There is no end point or phenomenon sufficiently definite to be relied upon as a criterion of the stage of penetration. The personal equation is enormous. The results are meaningless except in the hands of an experienced observer. With, perhaps, one or two exceptions the weight or thickness of the sheet is not taken into account. At best they can give no more than a rough approximation to the linear rate of penetration, and, therefore, would be applicable only to the grading of samples of like "bulk" even if the data they furnish were dependable. More, perhaps, is to be said in favor of the Stöckigt⁴ method than of any other of this type. Experience, however, indicates that data from this source are to be interpreted with caution. Ink stroke tests in the hands of an experienced observer will differentiate between hard and slack sized papers but are of little value

²Paper Making, Cross & Bevan, Fourth Edition, Page 233.

³Penetrability is a property of the liquid and depends upon viscosity surface tension and the angle of contact. Penetrability is a property of the paper and depends upon the nature of the materials and the number and size of the pores.

⁴Fritz Stöckigt, Wochenblatt für Papierfabrikation, 1920, i, p. 39, Translation, Paper, March 10, 1920.

for testing papers of nearly the same sizing quality. The Sammet method⁴ affords useful data but leaves much to be desired in that the personal equation is large, no numerical rating is offered and it is of little value except in the hands of an experienced observer. Pen and ink tests give information about the suitability of paper for writing purposes which cannot be obtained in any other manner. The various methods designed to differentiate as to size-fastness do not purport to describe the specific nature of the surface of the sheet, a thing which can be determined only by direct inspection and the use of written characters on the sheet. A high degree of size-fastness, moreover, does not necessarily recommend a paper for writing purposes, for example; the kraft, rope manila, M. F. Printing and S. and S. C. Printing of table IV. obviously are not suitable for writing papers despite the fact that they show a degree of sizing quality which compares favorably with that of writing papers. There remain for our consideration the conductivity or electrolytic method proposed by Okell⁵ and a new method in process of development.

The Electrolytic Method

Okell applied an electrolyte to both sides of the sheet of paper in an electrolytic cell so constructed that the paper formed a partition between the electrodes. The cell formed one of the resistances in a Wheatstone bridge. An alternating current from an induction coil was applied to the bridge, in which a telephone receiver was used to take the place of the galvanometer employed with direct currents. The rise in conductance was noted as the sheet was permeated and finally saturated by the electrolyte. The data were used presumably to express the degree of penetration in plotting the function against time. Because of the apparent close relation between the increasing conductance and the permeation of the sheet, it was felt that this method would afford data of a more reliable nature than that from other methods in use. But no further effort was made to interpret the data thus obtained. From time to time desultory attempts have been made to follow up this method and, indeed, a few laboratories are using modifica-



FIG. 1.

Photograph of electrolytic apparatus.

tions of the process at the present time, principally for control purposes. The statement of Sutermeister⁶ that "the results obtained are interesting and warrant its use for scientific investigation but the apparatus does not appear well adapted to the rapid work required where a larger number of routine tests must be made in the shortest possible time" is well taken. The method offers by far the best available means of studying the phenomena in connection with the whole problem of the size-fastness of paper.

⁴Bureau of Chemistry, Circular, No. 107.

⁵Stanley A. Okell, *A New Test for Size-Fastness*, Paper Age, 11, '77, page 20; Pulp and Paper Magazine, May 10, 1917, p. 463.

⁶Edwin Sutermeister, *Chemistry of Pulp and Paper Making*, p. 413.

Ultimately the method may be developed to admit of sufficient rapidity for routine testing if, indeed, the data can be interpreted fully in terms of the sizing quality.

The apparatus as developed for the present investigation is shown in the photograph (Fig. 1). A is the specially constructed electrolytic cell. B₁ and B₂ are a forty ohm and a ten ohm rheostat in series, forming the balancing resistance for the cell. Experiment has shown the inductive effect to be negligible under

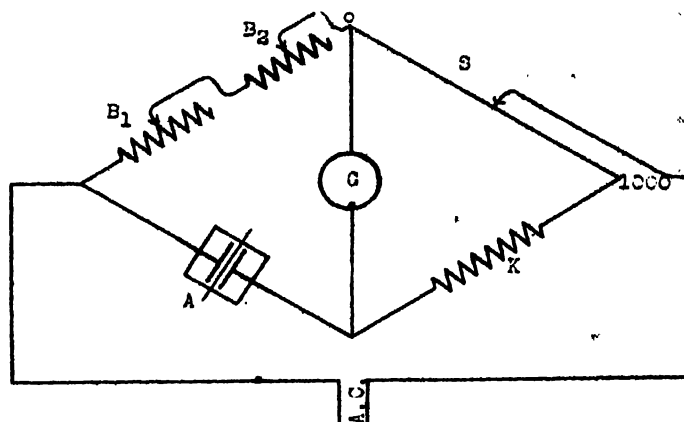


FIG. 2.

Diagram of bridge connections

the conditions. A second electrolytic cell may be substituted for the rheostats as in Okell's apparatus. Or by using a resistance box, readings can be expressed in a definite unit. This is a very desirable modification for subsequent use. For simplicity in this preliminary work, data have been expressed in terms of the slide-wire readings. S is the slide-wire of circular form, K is a non-inductive of resistance equal to the maximum resistance of the slide-wire and G is an alternating current galvanometer. Reference to Fig. 2, will make clear the relation of the instruments in the Wheatstone bridge. The current in the bridge has an electromotive force of three volts, being stepped down within the galvanometer case from a 110 volt, single phase, 60 cycle commercial circuit. D is a drum which carries co-ordinate paper. The mechanism which rotates it is automatically released at the instant the cell is filled with electrolyte and the operator keeps the galvanometer needle at zero by turning the crank, C, which transmits a relatively slow motion to the slide-wire contact which in turn gives a horizontal motion to a recording pen, N. The curve is, therefore, made autographic as a result of this horizontal motion and the rotation of the drum as a function of time. A sample of paper, P, is shown ready to be clamped between the two halves of the cell.

The electrolytic cell, A, is essentially as designed by Mr. Shaw⁷ with the addition of an improved method of filling and evacuating the cell. It is made of ebonite, the lower tubes being integral with the main body of the cell while the upper tubes are of glass. The joints being made watertight by means of sections of rubber tubing. The two halves of the cell are carried on lever arms pivoted at F. When the ends opposite the cell are snapped together the machined faces of the two halves of the cell are held together with sufficient force to produce a water tight joint. The electrodes, E, are platinized silver discs about half a millimeter thick and as large as the cell opening, which is an inch and a half in diameter. A three-inch piece of No. 12 silver wire is soldered to the middle of each disc and passes through a rubber plug in the outer wall of the cell, thus permitting adjustment of the electrodes to any desired position. They are ordinarily operated at a distance of about seven or eight millimeters apart. The silver

⁷The present investigation was begun by M. B. Shaw but the pressure of other duties prevented the giving of his time to it.

electrodes have been perfectly satisfactory and represent but a small fraction of the cost of platinum electrodes which would serve the same purpose. In other respects the cell proper is similar to that used by Okell and later by Clark and Durgin.* The containers, H, are of rubber and hold the electrolyte while the cell is open. Each is connected to one side of the cell by rubber tubing at the lowest point of which is a glass stop cock for draining the system. Pressure on the rubber containers produced by rubber bands attached to the lever arm, L, causes the cell to be filled with electrolyte rapidly and uniformly. T, T, are thermometers for recording the temperature of the electrolyte within the cell, which should be kept constant to within half a degree centigrade. The majority of the work is being done in a room which is kept at constant temperature and relative humidity. But some tests have been made outside this room at other temperatures and the temperature was controlled by means of water circulating through glass coils situated just behind the electrodes. The heating effect of the current is not sufficient to affect the desired degree of accuracy. But comparative tests must be made at the same temperature in order that the penetrativity (penetrating power) of the electrolyte may not be changed by reason of the effect of temperature upon viscosity.

The reason for the use of the large electrodes instead of the smaller ones previously used will become apparent when the fact is considered that a measure is desired, not of the changing resistance of the cell as a whole, but of the changing resistance within the sheet itself due to the meeting of the electrolyte in the middle of the sheet as it is permeated. It is desirable, therefore, that this resistance within the sheet be as large as possible in comparison with the resistance of the remainder of the cell. This is accomplished by the use of well platinized electrodes at least as large as the cell opening and as close together as is consistent with practical considerations in the operation of the cell. Large electrodes also reduce the effects of polarization. Furthermore the use of the large electrodes makes possible the derivation of an expression for the resistance within the sheet.

The cell is essentially a low conductivity unit and it is logical that an electrolyte of low conductivity be used. Such an electrolyte produces within the sheet a resistance of such magnitude as to be comparable to the other resistances in the bridge, and a resistance

of the leads external to the cell is negligible. At present — $\frac{N}{30}$ KCl

solution and — $\frac{N}{20}$ KCl solution containing about 25 per cent

glycerine are being used. The solutions give to the cell without a paper partition a resistance of about fifteen ohms. Solutions of lower conductivity might give even better results. Any simple neutral salt would, perhaps, do as well as potassium chloride. The glycerine is added to increase the viscosity and hence to decrease the penetrativity of the solution in order that the resistance may not fall too rapidly to permit obtaining a satisfactory graph. Only partial success has been attained in relating the graphs made with different electrolytes. Its importance is apparent when one considers that it would be impossible to make a continuous rating of paper as to size-fastness without this relation, since the use of any given electrolyte is limited to a comparatively small range of papers.

Certain writers object to neutral solutions and solutions other than ink for use in tests of sizing quality on the ground that the hydrochloric acid in the ink gives to it a greater penetrating power than the other solutions possess. Unless the phenomenon of selective absorption is found to preclude comparison of results with ink and other solutions, no ground for such objection is apparent and

the problem becomes one of determining coefficients of penetrance. In any event the relative values of results obtained in the two cases might be expected to agree. It is hoped that the problem of the relation of graphs made with different solutions can be satisfactorily solved, in which case it can be shown whether or not the penetrativity of ink can be determined in the same manner as that of true molecular solutions.

While experiments with this method and the one described later indicate that the initial moisture content probably does not affect the rate of absorption to as great a degree as it affects other physical qualities of paper, comparative tests should be made at constant temperature and relative humidity.

The reliability of the data obtained by the electrolytic method is indicated by the fact that in many cases curves made under identical conditions from different samples cut from the same sheet are completely superimposed. While duplication is not attained to quite the same degree in all cases it is reasonable to suppose that the difference is due to influences within the sheet rather than to the method of testing, in view of the many factors inherent in the paper which may affect the curves.

The curve of slide-wire reading versus time obtained with this apparatus cannot be regarded as an absorption curve. For its ordinate is produced by the change in the resistance of the cell as a whole rather than by that of the paper partition alone. Moreover, the volume of liquid which determines the ordinate at any given time is not the same as the total volume absorbed in that time. The significance of this fact will be considered later (See Fig. 4.). The original graph is, therefore, used as a data curve from which other graphs are derived.

Before beginning a test the slide wire, which has a scale divided into one thousand units, is set on the 1000-mark and the cell without a paper partition is filled and the bridge is balanced. The resistance of the cell without a partition is then equal to the resistance in the arm containing the rheostats (since the resistance of K is equal to the resistance of S). If R represents the resistance of the electrolytic cell at any time as the paper diaphragm is permeated, R_0 , its resistance without the paper partition and r , the resistance of the arm containing the rheostats, then $R_0 = r$ at all times.

It cannot be supposed that for all cases whatsoever the resistance within the paper can be expressed by the difference between the total resistance of the cell and the sum of the resistances of the electrolyte on each side of the paper partition, i. e. by $R - R_0$. But with electrodes as large as the paper exposed it might well be supposed that after a certain degree of permeation $R - R_0$ would express the resistance within the paper, since the lines of force approximate straight line paths. Experiment has confirmed the correctness of this assumption. If a porous partition with a definite cross sectional pore area be placed in the cell and readings be taken with the electrodes in various positions, both the total resistance of the cell and the resistance external to the porous partition will vary, but their difference, which is the resistance within the porous dividing wall, must remain constant. That is, if $R - R_0$ is a measure of the resistance within the partition it must remain constant for all positions of the electrodes. Experiments were made with four saturated samples of different grades of paper and with a celluloid partition containing two hundred small holes distributed all over the part exposed in the cell, the cross-sectional area representing about 0.13 of the cross-sectional area of the cell opening. Results for two positions of the electrodes in each case are shown in table 3.

TABLE 3. — Four Saturated Samples Paper —						
Value of $R - R_0$	1st position	2nd position	0.138r	0.234r	0.584r	0.093r
	0.131r	0.230r	0.586r	0.096r	0.574r	0.576r

Evidently it is permissible to use $R - R_0$ as an expression of the resistance within the paper for all values except those obtained

*Clark & Durgin, Research Work on the Sizing of Paper, Paper, Feb. 13, 1918, and May 13, 1918.

from the initial portion of the curve, the extent of which is not yet accurately known. $\frac{R-R_0}{R_0}$ would express the ratio of the

resistance within the sheet at any time to the constant resistance of the cell without the paper partition for the same solution. Curves plotted with $\frac{R-R_0}{R_0}$ as ordinate and time as abscissa for differ-

ent grades of paper would give expressions for the relative resistance in each, after any given interval of time, the resistance being a function of the amount of electrolyte having met within the sheet. It is also to be noted that the numerator and denominator of this ratio are expressions for the resistance of different volumes of the same electrolyte. The conductivity is, therefore, a factor of each, a fact which makes the graphs independent of the conductivity of the electrolyte. By reference to Fig. 2, it will be seen that the resistance in A is to the resistance in B, B₂ as the resistance in K, plus the resistance in that portion of the slide wire between the sliding contact and the end corresponding to the 1000-mark on the scale is to the resistance in the remainder of the slide wire when the galvanometer reads zero. Since the resistance of K is equal to the total resistance of the slide wire the latter ratio can

be expressed in slide wire units, $\frac{2,000-W}{W}$ where W is the slide wire reading at any time. For the proportion may be written, $R:r = 1,000 + \frac{(1,000-W)}{2,000-W} : W$ or,

$$\begin{aligned} \text{Then, } R &= r \frac{(2,000-W)}{(W)} = R_0 \frac{(2,000-W)}{(W)} \quad (\text{Since } R_0 = r) \\ \text{and, } R - R_0 &= R_0 \frac{(2,000-W)}{(W)} - R_0 = 2R_0 \frac{(1,000-W)}{(W)} \\ \text{Therefore, } \frac{R-R_0}{R_0} &= 2 \frac{(1,000-W)}{(W)} \end{aligned}$$

Since relative values only are to be obtained the constant multiplier, 2, can be neglected and $\frac{R-R_0}{R_0}$ be plotted as an expression of $\frac{1,000-W}{W}$

The transition from the electrical resistance, which is the measurable quantity, to the corresponding volume of liquid absorbed, the quantity of which a measure is desired, is a crucial step in the development of the electrolytic method. Since the volume rate of absorption in the formulated definition of size-fastness is not uniform but negatively accelerated, relative sizing quality may be compared by comparison of the reciprocals of the relative volumes absorbed

in a given time interval. If it were possible to plot $\frac{R-R_0}{R_0}$ or $\frac{1,000-W}{W}$ corrected to unit thickness as ordinate and the correspond-

ing time as abscissa and it could be assumed that the resistance is inversely proportional to the volume absorbed by a given sample of unit thickness, the resistances for any given time on the various graphs made from different grades of paper would classify according to size-fastness. Since the resistance would be proportional to the thickness of the sheet for a corresponding degree of permeation the ordinate of the graph corrected to unit thickness

would be $\frac{1}{l} \frac{1,000-W}{W}$ where l is actual thickness of the sheet

But the time would also have to be corrected, since the time required for a given degree of permeation of the sheet of unit thickness would be greater or less, according as the unit thickness chosen is greater or less than the actual thickness.

Some equations derived by Washburn¹⁰ for capillary flow porous bodies will aid in this matter. In order to apply these equations in their simplest form it is necessary to show that the small hydrostatic pressure on the paper in the cell is negligible in comparison with the capillary pressure. This would be expected from a consideration of the size of the capillaries in paper. It was shown experimentally by selecting a paper, the graphs of which could readily be duplicated at a given hydrostatic pressure, and making graphs at varying pressures. Three superimposed graphs were obtained by operation at mean heads of 4.5, 6.5 and 8.5 cm. While it is not to be expected that these equations apply rigidly to a substance like paper which expands while the liquid is being absorbed, the equation for instantaneous rate would seem to indicate that for absorption in the direction normal to the surface of paper they do represent the facts with sufficient accuracy for present purposes. In this equation the expression for in-

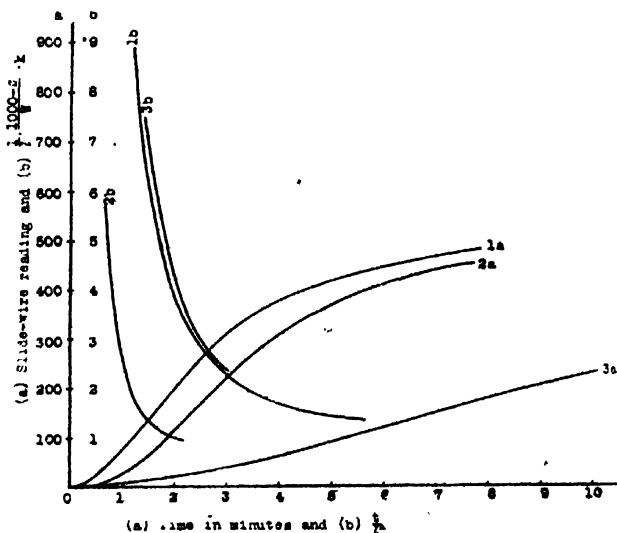


FIG. 3.

Resistance curves (b) for a common thickness derived from original slide-wire graphs (a)

stantaneous linear rate is directly proportional to the radius of the capillary being penetrated and inversely proportional to the distance already penetrated. When paper absorbs a liquid the expansion takes place almost altogether in the direction of the thickness, so that if the effective radii of the capillaries and the thickness of the paper increase in the same ratio the linear rate would be the same at any given time whether the paper expand or not. Any expression for the volume of the liquid absorbed would involve the thickness of the wet sheet so that the thickness is measured after the test rather than before. The thickness which is ordinarily measured on the dry sheet is not used in this calculation. The equation expressing the relation of the distance penetrated to time elapsed states that the time is proportional to the square of the distance. Bell and Cameron¹¹ arrived at a similar relation. The

¹⁰Edward W. Washburn, The Dynamics of Capillary Flow, Physical Review, March, 1921.

¹¹Journal Phys. Chem., 10:655 (1906).

correction factor for time, t , for the converted graph would, there-

fore, be $\frac{l}{p}$. Graphs of three bonds thus corrected to a common thickness are shown in Fig. 3. It will be seen that a common time value cannot be chosen well within the region where $R - R_0$ is known to express the resistance within the sheet. It cannot in general be assumed, moreover, that the resistance is inversely proportional to the corresponding volume absorbed. For the volume which is continuous through the sheet, prior to saturation, is less than the total volume absorbed. Furthermore the equations apply to continuous capillary flow, while the liquid in a given capillary ceases to move according to these laws as soon as it meets the column advancing from the opposite side.

Washburn has shown that the volume of a liquid absorbed by a porous body varies as the square root of the time. If a graph is plotted the ordinate of which is the reciprocal of the ordinate values of Fig. 3 (b), and the abscissa the square root of the abscissa

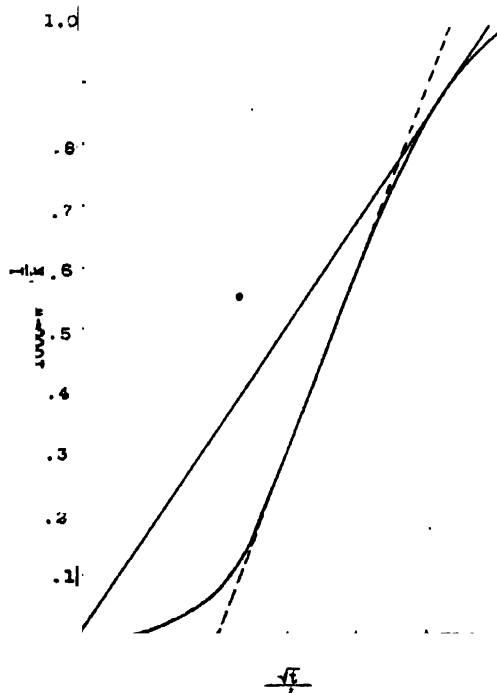


FIG. 4.

Curve of conductance within the sheet plotted against the square root of the corresponding time.

values of the same figure a straight line might be expected. Such a graph is shown in Fig. 4. There is a considerable straight line portion but its extension does not pass through the origin. For every such graph, however, there is a tangent through the origin. It would seem, therefore, that, if the curve has any meaning in terms of absorption or sizing quality, there is but one point on the curve, the corresponding resistance of which, is inversely proportional (the conductance corresponding to this point being directly proportional) to the volume of liquid which would have been absorbed in the same time if the sheet were sufficiently thick that no liquid had penetrated entirely through in that time. If the

ordinate, $l \left(\frac{W_1}{1,000 - W_1} \right)$, of this point is proportional to the volume

which would have been absorbed in time $\frac{t_1}{p}$, the relative volume

which would have been absorbed in unit time would be,

$$l \left(\frac{W_1}{1,000 - W_1} \right) \left(\frac{1}{t_1} \right)^{1/2} = \frac{p}{v t_1} \left(\frac{W_1}{1,000 - W_1} \right)$$

Hence the reciprocal, $\frac{v t_1 (1,000 - W_1)}{p W_1}$ would be an expression of

relative sizing quality according to definition where l is the thickness of the wet sheet, W_1 is the slide wire reading on original autographic curve corresponding to point of tangency on the graph of type shown in Fig. 4, and t_1 is the time corresponding to W_1 . In practice no curves are plotted but the approximate value

of W_1 is found by trial from the original graph where $v t \left(\frac{1,000 - W}{W} \right)$

is a minimum, tables of values of $\frac{1,000 - W}{W}$ being used.

It has been found that equal resistances in different grades of paper of same thickness apparently do not represent equal volumes of electrolyte. In fact it has been found that the resistance per unit thickness of one kind of paper of a given surface area when saturated may be several times as great as the corresponding resistance in the case of a different kind of paper. The explanation is probably to be found in the structure of the sheet which may offer varying degrees of hindrance to the free passage of the ions and hence may vary the apparent resistance of the electrolyte. Attempts have been made to introduce a correction factor into the relation derived above for this source of error by taking the slidewire reading for a saturated sample and calculating the excess of resistance over that corresponding to a like volume of liquid of same thickness which is not broken up by the fiber structure. A simple factor involving the thickness of the sheet, the distance between the electrodes and the fluid volume of the saturated sample is possible. The latter quantity can be obtained by the usual method of air space determination if the thickness of the saturated sample is used instead of the thickness as ordinarily determined on the dry sample. Thus far, however, the results obtained do not appear to be satisfactory.

Certain current modifications of the electrolytic method which are based on the assumption that the saturated sample offers no electrical resistance or that equivalent resistance values represent equivalent degrees of permeation are obviously fundamentally at fault.

It is doubtful if more than a good approximation can be hoped for until considerable work is done in other fields. The possibility of the solution of soluble size and of unreliable results in the case of surface sized papers are objections which are equally applicable to nearly all other methods in common use and would limit the application of the electrolytic method to a corresponding extent. Other methods of attack are being investigated with some promise of success. Because of the positive nature of the data obtained by this apparatus it is hoped the difficulties may be overcome sufficiently to admit of its use as a test method for size-fastness determination. But at present it must be regarded as of value chiefly as an aid in studying the phenomena in connection with the absorption of liquids by paper in order that more intelligent interpretation may be placed upon data from other sources and test methods.

Proposed New Method

A new method for the determination of sizing quality based upon a principle not heretofore made use of for this purpose is being developed. As is well known a small piece of paper when floated on the surface of water will curl up into a cylindrical form with the machine direction as an axis. When the maximum

degree of curling has taken place the sample immediately begins to unfold. A few observations will reveal the fact that the time required to attain this maximum degree of bending is remarkably uniform for the same paper under like conditions. The attempt to account for this uniformity resulted in the following explanation which, while logical, is perhaps impossible to prove. The test of the assumption must lie in the results to which it leads. Let Fig. 5, represent a cross section of a piece of paper floated on water or ink. Since the interstices within the sheet are of varying sizes the flow of the liquid into them will proceed at different rates. Hence in a short time the liquid will have advanced to some position, *a*, having an irregular front. As liquid enters the pores surface tension tends to spread the fibers apart. The expansion thus produced on the under side of the sample causes the paper to curl upward. This curling will continue until the rate of expansion is equal on the two sides of the center line. Since the liquid front is irregular it does not all reach the center line at once. As the more advanced portions pass the center line of the cross section the rate of expansion at the under side decreases rapidly while the upper side begins to expand. The rate of curling, therefore, rapidly decreases to a value of zero when as great a volume of liquid has crossed the center line as yet remains to cross in order that the under side be completely saturated, *i. e.*, when the sample is half saturated (*b*, Fig 5). As the liquid advances farther the rate of expansion of the upper side exceeds that of the lower and the sample begins to unfold. The explanation, therefore, of the uniformity of the time required for the sample to curl up is found in the fact that the time is a function of the constant fluid volume of the saturated sample per unit of surface area. If it is possible to measure the volume occupied by the liquid in such a sample sufficient data are made available for the determination of size-fastness as defined in the preceding discussion. If it can be assumed that all the air is displaced by the liquid an expression can be found for this quantity by the method of "air space" determination described by Sindall¹⁹ and other authors, by using as thickness that of the saturated sample. While this assumption is perhaps not strictly correct it is probably a fair approximation to the truth. The method, moreover, is at present the only one available for the purpose. As has already been stated, relative size-fastness may be expressed by the reciprocal of the volume of liquid absorbed in a



FIG. 5.

Representation of cross section of paper floated on liquid.

unit time. If the fluid volume of a saturated sample be designated V by V then — is absorbed in the time of curl, t . Since the volume absorbed varies as the square root of the time the volume absorbed in a unit time is — Since only relative values are desired

at present any constant multiplier may be neglected. — is, therefore,

by definition, an expression of relative size-fastness. Obviously the same or similar data can be used for determining the waterproofing quality, absorptive quality, etc., of paper when properly interpreted. As an example of the distinction, sizing quality is

independent of the thickness while waterproofing quality is a function of the thickness of the sheet.

Tests are carried out in the following manner. Fig. 6, represents a crystallizing dish, *D*, filled with water or ink, both of which have been used in experiments thus far with good agreement of results, although, of course, the time of curl differs somewhat. Distilled water appeals to one as being more satisfactory as a standard for general use in testing if it will serve the purpose as

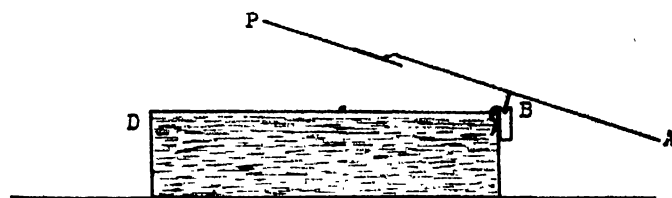


FIG. 6.

Testing apparatus.

well as ink. It is essential that the liquid and paper sample be at the same temperature. Otherwise, the expansion will be due in part to change of temperature. A small wire, *A*, is bent into such shape as to rest in slots at *B* and have a lever arm extending in either direction. On one end is wound a small strip of adhesive tape with the adhesive side out. This is attached to the sample, *P*, in the middle along the machine direction where it will not affect the curling in any way. The purpose of this is to hold the sample in position for ease of observation. Otherwise it will be continually shifting its position, rendering observation difficult. *G*

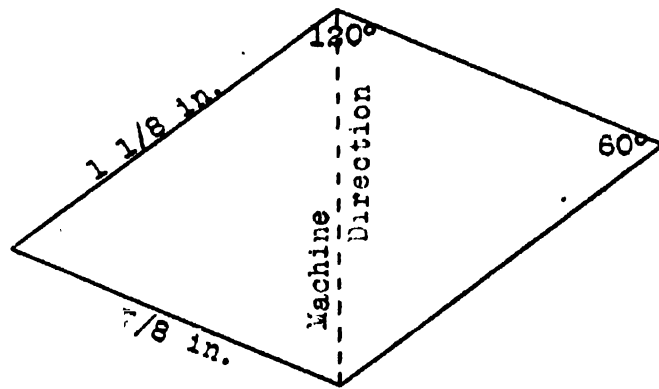


FIG. 7.

Test sample.

is a microscope slide ruled with lines about a millimeter apart, supported above the sample. The purpose of this is to facilitate the determination of the curl inversion point, since the observer can watch the edge of the sample moving beneath the lines. Samples of paper cut in the shape of a rhomboid as illustrated in Fig. 7, have been found convenient for the test. In case a paper has an excessive degree of curl the test samples are cut with the long diagonal in the machine direction. By means of a stop watch the time is taken from the placing of the sample on the liquid to the instant the points of the rhomboid reverse their direction of movement. The sample is then immersed in some of the liquid in another vessel until saturated and the thickness measured. The average of five such readings is used in the computation. Check readings will vary by but a few seconds which may be expected on account of variations in thickness. Slight variations are of little consequence since the square root of the time is used in the relation derived. A sample of definite area (100 sq. cm. is con-

¹⁹R. W. Sindall, *Elementary Manual of Paper Technology*, pp. 113 & 220f.

venient), is cut from the same sheet the test samples were cut from and heated in an oven 105°C. until all moisture is expelled, after which it is weighed in a weighing bottle on a chemical balance. The fluid volume of the saturated sample is then calculated by the method already mentioned. The use of metric units greatly facilitates the calculation. When the ash content does not exceed some three or four per cent the fluid volume of the sample may be determined with sufficient accuracy for present purposes by subtracting two-thirds its bone dry weight in grams from its total volume (saturated) in cubic centimeters. The lateral expansion of the sample is neglected. The per cent fluid volume multiplied by the mean value of the thickness of the saturated test samples is the

quantity V of the relation — which is a measure of the relative

size-fastness of the paper tested. Table IV shows the results from a number of different kinds of paper, using distilled water at 21°C. (70°F.). Table V gives the results by this method on the papers of Tables I and II.

TABLE 4.

No.	Description	Wt. 25x40	Thickness in cm		R. S. Q.*	(a)	(b)
			Dry	Wet			
1	Special No. 1 bond	34	0.0075	0.0090	0.5	1.6	58
2	Pine bond	64	0.100	0.140	0.2	1.0	61
3	Kraft	60	0.125	0.150	0.3	3	67
4	Commercial ledger	96	0.165	0.230	0.9	1	61
5	White bond	54	0.105	0.130	1.3	8	60
6	Rope manila	94	0.150	0.230	1.6	5	64
7	Fine writing	78	0.130	0.175	0.8	2	61
8	S. & S. C. Printing	52	0.075	0.105	9.6	4	62
9	White writing	54	0.090	0.115	1.1	0.9	61
10	M. F. Printing	71	0.175	0.145	24.4	0	63
11	Mimeograph	35	0.100	0.130	9.4	2	64
12	Newsprint	37	0.090	0.125	0.5	4	74

*Relative sizing quality.

TABLE 5.

B.S. No.	Per cent fluid Vol.	Time in Seconds						Vt	R. S. Q.	(a)	(b)
		15	16	17	18	19	20				
6967	0.0115	61	31	34	32	31	36	33	5.7	67	41
4909	0.0140	61	19	19	20	18	19	19	4.4	58	35
4971	0.0125	61	20	20	19	20	20	4.5	58	35	35
4972	0.0130	60	5	6	6	6	6	2.5	52	33	33
4974	0.0075	64	38	40	37	37	38	6.2	48	29	29
4975	0.0215	60	69	75	65	67	69	8.3	59	36	36

It is obvious that for testing papers having approximately the same per cent fluid volume the more simple relation — can be used.

Caution must be exercised, however, as is evidenced by the conspicuously high relative value of No. 3 under (b) of Table IV, which results from the greater porosity of this paper. For the greater part of routine testing this expression is perhaps preferable in order to save time, doubtful cases being confirmed by the more involved relation. Data determinations must be made in the light of the probable degree of accuracy attainable in the final result. While it is difficult to estimate the magnitude of probable errors in this work the accuracy of the method is perhaps within ± 5 per cent if the assumption which makes possible the determination of V is within this limit of error.

The grades of paper to which this method is applicable range from a good news print to the finest bonds. It is not, however, well adapted to the testing of paper which is of such thickness as to render the degree of curl comparatively small. The obvious advantages of this method are definite and dependable data, a numerical value for relative sizing quality, a simple apparatus and the short time required for a test. Subsequent investigation will no doubt alter certain details of the method, but it is considered sufficiently stable to be of considerable value in the laboratory.

Summary

A brief resumé is made of test methods in common use with data showing the lack of agreement among these methods.

Okell's electrolytic method is discussed at some length, a relation for the resistance within the sheet being derived and a method indicated for the conversion of data to a sheet of common thickness. The adaptability of the apparatus to research work on the whole problem of sizing is regarded as the chief value of the method in its present state of development. A new test method, involving a principle not before used for the purpose, is proposed by which relative sizing quality is given a numerical value.

Final Survey for Alaska Paper Project

[FROM OUR REGULAR CORRESPONDENT.]

JUNEAU, Alaska, March 14, 1922.—Continuation of investigations of the pulp and paper manufacturing possibilities in the Bradfield Canal section is now in progress by W. E. Dunkle, engineer representing the Guggenheim interests. Mr. Dunkle and a crew left Ketchikan last week for the canal district to take up the preliminary work where it was left off last November.

The Federal Power Commission has issued the Guggenheims a temporary permit giving them prior rights to the power sites pending the issuance of a permanent development license. The latter will be issued when the company has made the necessary showing. It is to complete this that Mr. Dunkle and his crew went to the canal.

In an article in the Ketchikan *Chronicle*, Mr. Dunkle is quoted as follows: "The outlook is bright. Our preliminary investigations have been encouraging, but there is no probability that the plant will be constructed this year. The investment for such a plant would be great and of course the details must be thoroughly worked out before any great sum is spent."

In considering the building of a pulp and paper plant there are four big considerations, Mr. Dunkle pointed out. There are the power, the timber, transportation and the market questions to be considered. In Bradfield Canal it is hoped that suitable power can be developed. Preliminary investigations indicate that it can be and there is sufficient timber.

Market conditions are not so favorable now as they were a few months ago. Great quantities of foreign news print paper is being flooded over the country, cutting the prices down, and there is no likelihood that there will be any material increases for some time. The transportation question also is a serious one, as the paper manufactured in Alaska would have to be taken east or to the gulf states, and under present conditions it is a difficult matter to handle.

In the manufacture of paper, the use of coal will be a big item in Alaska for any plant that starts operating. Unless the water-power developed is tremendous and extremely cheap, coal must be used in great quantities, virtually three-quarters of a ton of coal being needed for every ton of paper.

These are the big items which must be figured carefully by all the capitalists who are considering putting in paper plants in Alaska, and items which they will go over at length before making definite decisions to proceed.

In cases where the manufacturer would consume a large part of his own product, conditions are more favorable for the start now than for those who consider entering the field for commercial purposes only, and for that reason persons best informed in such matters believe that there is a great possibility that the Shrimp Bay outfit will go ahead in the near future.

Simplex Paper Corp. to Increase Capital

[FROM OUR REGULAR CORRESPONDENT.]

PALMYRA, Mich., April 3, 1922.—The Simplex Paper Corporation will increase its capital from \$30,000 to \$50,000. This concern operates a one-machine mill, producing wrapping papers.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Manufacture of Paper Containers.—*Paper Container*, v, No. 3, 94-96.—The twenty-first article of the series on the manufacture of paper containers.—A. C.

Paper Barrels.—*Paper Container*, v, No. 5, 197.—An article on the use, advantages, and manufacture of paper barrels.—A. C.

Interchangeable Factors in Esparto Boiling.—Alfred W. Smith.—*Paper Making*, xl, No. 11 (Nov., 1921).—Paper read at the Edinburgh meeting of the Technical Section of the Paper Makers' Association of Great Britain and Ireland.—A. C.

Use of Mixing Tanks in Place of Beaters.—*Paper Making*, xl, 336 (Nov., 1921).—A discussion of the tendency in modern mills to use a mixing tank instead of beaters and a description of the form of mixing tank used at the Camas mill and also of the one at the West Linn mill, in Oregon.—A. C.

Preservation of Fruit by Means of Gummed Paper.—*Paper Making*, xl, 336 (Nov., 1921).—At a meeting of the Gummed Paper Manufacturers at Atlantic City it was stated that gummed paper can be used to preserve perishable fruits and thereby greatly add to the palatability as well as to the keeping qualities of the fruit.—A. C.

Experimental Paper Mill for Siam.—*China Clay Trade Rev.* iii, No. 29 (Oct., 1921).—The Siamese government has planned to purchase a small experimental paper mill for use in Bangkok, Siam, for the purpose of developing the use of raw materials such asalang grass, rice straw, and banana stems for paper making. It is possible for some of this paper to be used by government departments in Siam. The mill will be shipped complete in all details, and it is stated that the Siamese government has decided to obtain the services of an American to install the mill, start operations and teach the natives to handle it.—A. C.

Testing Dyes for Colored Papers.—B. K. Steadman. *China Clay Trade Rev.*, iii, No. 29 (Oct., 1921).—See this journal, lxxii, No. 25, 50, June 16, 1921.—A. P.-C.

Cleansing Paper Machine Felts.—Fr. patents No. 167,929, 167,930. J. T. Ayers, Lachute, Que., Canada.—*Paper Making*, xl, 313 (Oct., 1921).—No. 167,929. The felt is passed in contact with a napping device which tears off particles of the foreign matter adhering to the surface. The back of the felt is then sprayed at high pressure, while the face is passed before a suction box which collects the cleaning liquid and any remaining foreign matter which may have been left after the napping process. No. 167,930 covers the machine for carrying out the process.—A. C.

Pinabietic Acid, a Resin Acid from Sulphate Black Liquor.—Ossian Aschan and K. E. Ekholm.—*Finska Kem. Medd.*, 1918, p. 8; *Chem. Soc. Abs.*, cxvi, Pt. 1, 326 (1919).—Pinabietic acid, $C_{10}H_{16}O_6$, shining needles, melting point 176-178° C., has been isolated from the resin acids of the black liquor of sulphate mills. When dissolved in a mixture of chloroform and acetic anhydride, the acid yields, on addition of a little concentrated sulphuric acid, a purplish red coloration which passes through violet and blue into black. With hydrochloric acid and ferric chloride the coloration is violet blue. The residue obtained after evaporation with nitric acid becomes orange-yellow on addition of ammonia, instead of violet as with abietic acid. The specific rotation depends greatly on the solvent, the acid being dextro-rotatory when dissolved in aromatic hydrocarbons and levo-rotatory in solution in aliphatic hydrocarbons.—A. P.-C.

Simple Method of Analyzing Bearing Metals and Similar Alloys.—G. Oosterheld and P. Honegger. *Helv. Chim. Acta*, ii, 938-416 (1919); *Chem. Soc. Abs.*, cxvi, Pt. 2, 478-479 (1919).—The principles on which the method described is based are as follows: The alloy is dissolved in boiling concentrated sulphuric acid,

dissolution being complete in a few minutes even with an alloy rich in lead. The antimony passes quantitatively into solution in the trivalent form and the tin as stannic sulphate. The copper and lead are converted entirely into copper and lead sulphates, subsequent dilution with water resulting in the separation of a crystalline lead sulphate, which is readily removed by filtration through a Gooch crucible. In the filtrate the antimony is titrated directly with potassium bromate, the titrate solution being then reduced and the tin, and afterwards the copper, being determined volumetrically. In the presence of tin, antimony, and lead, copper may be estimated in a few minutes by a simplified form of electrometric titration with sodium thiosulphate.—A. P.-C.

Transformation of Wood into Pure 100 Per Cent Ethyl Alcohol.—Fr. patent No. 503,990, R. Fabre and L. Solari, Italy, March 31, 1921.—*Chimie et Industrie*, v, 458 (April, 1921).—A. P.-C.

Process for the Manufacture of Alcohol from Wood or Other Cellulosic Materials.—Fr. patent No. 503,073, E. Dubourg, France, March 8, 1920.—*Chimie et Industrie*, v, 323 (March, 1921).—The sawdust is sterilized by heating in an autoclave under a pressure of 2 atmospheres with 5 times its weight of water and 10 per cent of material in nitrogenous compounds. It is then saccharified by means of molds (*Heliumycelium fuliginosum* or *Botrytis cinerea*), aerating the material strongly. It is finally subjected to alcoholic fermentation.—A. P.-C.

Process and Apparatus for Watermarking or Embossing Paper.—Fr. patent No. 514,084, Chas. H. F. Smith, Canada.—*Monit. Papeterie Française*, lii, 257-258 (May 1, 1921).—A. P.-C.

Improvement to Paper Creping Machines.—Fr. patent No. 515,168, W. Wm. Colley, England.—*Monit. Papeterie Française*, lii, 288-289 (May 15, 1921).—A. P.-C.

The Preparation of Aluminum Compounds for Sizing Paper.—Fr. patent No. 515,314, George Muth, Germany, and Louis Duvinage, Belgium, Nov. 24, 1920.—*Papier*, xxiv, 212-213 (May 1921); *Monit. Papeterie Française*, lii, 325-6 (June 1, 1921).—The bauxite, or other aluminiferous material, is boiled with sulphuric acid or sodium bisulphate in open vessels, without preliminary calcination, in the presence of a small amount of a fluorine compound (sodium or calcium fluoride, cryolite, etc.), which gives off hydrofluoric acid when treated with sulphuric acid.—A. P.-C.

Process for the Treatment of Esparto.—Fr. patent No. 515,501, Dimitry Chouchak, Algeria, Nov. 25, 1920.—*Papier*, xxiv, 213-214 (May, 1921); *Papeterie*, xliii, 405-407 (May 10, 1921).—The grass is cleaned in the usual manner and crushed to facilitate penetration by the liquor. It is treated cold with very dilute acid and then with very dilute alkali, both the acid and the alkaline solutions containing a suitable amount (0.01-2 per cent) of a catalyst (sodium thiosulphate, stannous chloride, sodium sulphite, sulphonic acids and their salts, aniline, etc.), thus eliminating the greater part of the incrustants. The material is drained and then steeped for a few minutes in a liquor containing 2.5 to 3 per cent of caustic soda, and a suitable amount of the catalyst previously used. The fibers absorb about 5 to 7 per cent of their weight of caustic soda; but do not absorb the catalyst, and on draining away the liquor the latter need only be fortified with caustic soda before reusing. The fibrous material is heated by steam (directly or indirectly) for 20 to 30 minutes at 140° C., defibered, and washed; The caustic soda and fuel consumption are very greatly reduced, and also the first cost of the plant. The catalysts may also be used in the so-called English process, thereby effecting appreciable reduction in the time required for the treatment and in the fuel consumption, but the economies are not as great as in the process out-

lined above. The function of the catalyst is twofold: (1) it increases the rate of reaction; (2) it prevents the partial destruction of the cellulose.—A. P.-C.

Method of Producing Cellulose Fiber.—Can. patent No. 212,034, Judson A. Decew, Montreal, Que., Canada, May 31, 1921.—An alkaline solution containing about 15 per cent caustic soda is heated to a pulp cooking temperature, discharged into a digester containing the chips to be acted on, and the excess liquor withdrawn, so that the lignin will be attacked only by the alkali absorbed.—A. P.-C.

Manufacture of Wood Alcohol from Sawdust.—Can. patent No. 212,058, Lee F. Hawley, Madison, Wis., U. S. A., May 31, 1921.

Cathode for Chlorine and Alkali Cell.—Can. patent No. 212,060, Karl Heinemann, Pirna, Saxony, Germany, May 31, 1921.—In cells having a flowing mercury cathode, there is placed a stationary bottom plate provided on its surface with impedimenta arranged in rows forming a right angle with the direction of the mercury current, arranged so as to hold the surface of the mercury in continuous agitation.—A. P.-C.

Decomposition of Alkali Chloride Solutions.—Can. patent No. 212,061, Karl Heinemann, Pirna, Saxony, Germany, May 31, 1921.—On withdrawing the electrolyte from the anode compartment, the chlorine which it contains is removed, and the electrolyte is saturated with salt and used over again.—A. P.-C.

Expansible Safety Envelope.—Can. patent No. 212,092, K. Mikolajewski, Chicago Heights, Ill., U. S. A., May 31, 1921.—A. P.-C.

Vibrator for Screening Machines.—Can. patent No. 212,095, B. A. Mitchell, Utah, U. S. A.—A. P.-C.

Sulphite Waste Liquor as a Precipitant for Artificial Threads, Ribbons, Films, or Plates made from Viscose.—Can. patent No. 212,099, Max Muller, Finkenwalde, Germany, May 31, 1921.—Same as Br. patent No. 145,627. See *Pulp and Paper*, xix, 42, E-2, L-7 (Jan. 13, 1921).—A. P.-C.

Pulp Screening Device.—Can. patent No. 212,110, A. R. Paul, Utica, N. Y., U. S. A., May 31, 1921.—A. P.-C.

Fiber Board from Bagasse.—Can. patent No. 212,129, J. K. Shaw, Minneapolis, Minn., U. S. A., May 31, 1921.—The patent covers a fiber board composed of different layers of bagasse fibers, interlaced with each other, and carrying their natural pith in the form of protruberances attached to the different fibers which offer resistance when one fiber tends to slip over another fiber. The layers, which are composed of different qualities of fibers, are highly compressed to form a board of great tensile and breaking strength for use as a substitute for lumber or leather in the manufacture of furniture, baggage, and other articles.—A. P.-C.

Wallboard Made from Bagasse Fibers.—Can. patent No. 212,130, J. K. Shaw, Minneapolis, Minn., U. S. A., May 31, 1921.—The invention covers a fiber board composed of pith-carrying bagasse fibers interlaced with each other, said fibers carrying their pith in the form of protruberances attached to the individual fibers which offer resistance when one fiber tends to slip over another.—A. P.-C.

Paper Drying Machine.—Can. patent No. 212,153, Otto E. Tomlinson, Minneapolis, Minn., U. S. A., May 31, 1921.—A. P.-C.

Paper Making Machine.—Can. patent No. 212,156, H. G. Van Oium, Piercefield, N. Y., U. S. A., May 31, 1921.—A slice is provided which is adjustable both vertically and horizontally with respect to the deckle frame.—A. P.-C.

Paper Drying Apparatus.—Can. patent No. 212,170, American Coated Paper Co., Inc., assignee of F. P. Reed, East Orange, N. J., U. S. A., May 31, 1921.—The paper is carried through the driers on a wire which is not in direct contact with the heating surface but is separated from it by a layer of heated air.—A. P.-C.

Method of Water Control in Wire Sections of Fourdrinier Machines.—Can. patent No. 212,173, Bagley & Sewall Co., New York City, N. Y., assignee of F. W. Monaghan, Mosinee, Wis., both in the U. S. A.—The table rolls are so mounted that some of

them can be removed out of contact with the wire.—A. P.-C.

Electrolytic Cell for the Decomposition of Alkali Chlorides.—Can. patent No. 212,191, Fredrikstad Elektrokemiske Fabriker A/S, assignee of J. K. Langhard, both of Fredrikstad, Norway, May 31, 1921.—A. P.-C.

Rotary Screen.—Can. patent No. 212,204, Moore and White Co., assignee of J. A. White, both of Philadelphia, Pa., U. S. A., May 31, 1921.—A. P.-C.

Tanning Material from Spruce Bark.—Can. patent No. 188,352, S. Saxe, New York City, N. Y., U. S. A., Jan. 21, 1919.—The soluble material is extracted from the spruce bark, dried, and heated to a temperature of 215-220° F. It is thus relatively free from the soluble colloid non-tans normal to spruce bark.—A. P.-C.

Tanning by Means of Woodpulp Extract (Waste Liquor?).—Can. patent No. 188,358, J. K. Tullis, Paris, France, Jan. 21, 1919.—The hide is treated with a solution of an alkali bichromate and after complete penetration by the salt it is immersed in a solution of woodpulp extract.—A. P.-C.

Paper Container.—Can. patent No. 188,444 and 188,445, Sealright Co., Inc., assignee of Wilbur L. Wright, both of Fulton, N. Y., U. S. A., Jan. 28, 1919.—A. P.-C.

Corrugated Paper Board Tester.—Can. patents No. 188,598 and 188,699, John M. Webb, Chicago, Ill., U. S. A., Feb. 4 and Feb. 11, 1919.—(For comparison of Webb and Mullen testers see *P. Ind. Eng. Chem.*, xi, 133-138, 1919; *Pulp and Paper*, xviii, A-14, 900, Aug. 26, 1920).—A. P.-C.

Paper Testing Machine.—Can. patent No. 188,612, International Business Machine Co. of Canada, Ltd., Toronto, Ont., Canada, assignee of O. E. Braitmayer, Washington, D. C., U. S. A., Feb. 11, 1919.—When there is an imperfection in the paper being tested, an electric circuit is automatically closed, thereby bringing into operation a mechanism for mutilating the paper strip.—A. P.-C.

Production of Alcohol from Sulphite Waste Liquors.—Can. patents Nos. 188,636, 188,637, 188,638, Ralph H. McKee, Ridgefield Park, N. J., U. S. A., Feb. 11, 1919.—No. 188,636. In a process of making ethyl alcohol by fermenting sulphite waste liquors, the steps which consist in adding yeast to sulphite liquor containing an appreciable amount of sulphurous acid, aerating the solution substantially throughout the fermentation, thereby maintaining the fermentive action, and recovering alcohol vapors from the exit gases by scrubbing the same with unfermented liquor. (Cf. *Pulp and Paper*, xviii, 81, E-2, Jan. 2, 1920). 188,637. The process of producing ethyl alcohol from sulphite waste liquors, consisting in purifying the liquor by the action of barium carbonate under oxidizing conditions, thereby producing a sludge containing barium sulphate, separating the sludge, fermenting and distilling the purified liquor to obtain alcohol, furnacing the barium sulphate sludge under reducing conditions to form barium sulphide, and reconverting the sulphide into carbonate by treating under superatmospheric pressure with the carbon dioxide evolved from the fermentation vats. No. 188,638. In a process for producing alcohol from sulphite waste liquors, the steps which consist in subjecting the liquor which contains sulphites to the action of barium sulphide under oxidizing conditions, thereby producing barium sulphate and eliminating injurious sulphur compounds, and furnacing the barium sulphate under reducing conditions to regenerate barium sulphide.—A. P.-C.

Dextrin for Coating Paper.—Can. patents No. 188,639, 188,671, Wm. W. McLaurin, Brookfield, Mass., U. S. A., Feb. 11, 1919.—As an article of manufacture, a ready dissolved concentrated dextrin solution, or liquid, suitable, without further treatment, as a coating, adhesive, or impregnation for paper, textiles, wood and the like, having a concentration of about 50 per cent, said solution being made from commercially pure starch and of uniform quality throughout and having less than 10 per cent of sugar on the weight of the starch at 280° F. for a period sufficient to convert the mass are made into a comparatively smooth cream and heated in an autoclave with hydrochloric acid equal to 0.1 per cent of the weight of the dry product. No. 188,671. Equal parts of starch and water

into a fully converted dextrin in the form of a colorless solution, liquid at 60-70° F.—A. P.-C.

Roofing Paper.—Can. patent No. 188,744, Flintkote Co., Boston, Mass., assignee of F. C. Overbury, Hillsdale, N. J., both in the U. S. A., Feb. 18, 1919.—A. P.-C.

Boom.—Can. patent No. 189,518, A. E. Loosen, Bathurst, N. B., Canada, April 8, 1919.—A. P.-C.

Rinman Pulping Process.—Can. patent No. 189,655, E. L. Rinman, Bjursholm, Sweden, April 15, 1919.—The process of producing pulp consisting in relieving the raw material of air enclosed in it, boiling it in a caustic soda liquor, effecting the principal extraction at a temperature of 140-170° C., and treating the liquor during boiling with a catalyzer furthering reduction. (See this Journal, lxxii, No. 16, 259, 261, April 14, 1921.)—A. P.-C.

Distillation of Black Liquor.—Can. patent No. 189,656, E. L. Rinman, Djursholm, Sweden, April 15, 1919.—The concentrated black liquor (35° Bé at 60° C.) is mixed with caustic soda (to make up for losses), and also with lime and dry distilled at not over 500° C. The temperature during different periods is maintained within certain ranges corresponding to the decomposition temperatures of the different substances in the black liquor until the substance or substances corresponding to the temperature range have been formed and substantially distilled over. Each distillate is collected separately, so that the various substances are obtained separated from one another at the dry distillation.—A. P.-C.

Sulphite Digester Mechanism: Vapor-Accumulator.—Can. patent No. 189,679, Aktiebolaget Vapor-Akkumulator, Stockholm, assignee of J. K. Ruths, Djursholm, both in Sweden, April 15, 1919.—A sulphite digester plant comprising a steam boiler, a sulphite digester, a steam accumulator partially filled with water being interposed between the boiler and digester, the water space of the accumulator being connected to the steam space of the boiler, and the steam space of the accumulator to the digester. The accumulator is equipped with a superheater connected to the steam boiler. Also, Br. patent No. 144,084, May 29, 1919; Fr. patent No. 518,153, Dec. 27, 1920.—A. P.-C.

Pulp Washing Machine.—Can. patent No. 189,982, Samuel Milne, Edinburgh, Scotland, April 29, 1919.—A. P.-C.

Felt for Buildings.—Can. patent No. 190,030, Barrett Co., New York City, N. Y., assignee of R. P. Perry, Upper Montclair, N. J., both in the U. S. A., April 29, 1919.—A. P.-C.

Feed Mechanism for Knife Barkers.—Can. patent No. 190,176, Wm. Waern, Stockholm, Sweden, May 6, 1919.—A. P.-C.

Process for Molding Hollow Articles of Paper Pulp.—Fr. patent No. 515,589, P. E. Winnertz, Germany.—*Monit. Papeterie Française*, lii, 361-362 (June 15, 1921).—A. P.-C.

Pulper for Sheet Pulp.—Fr. patent No. 519,934, L. G. A. Potie, Isère, France, Feb. 4, 1921.—*Papier*, xxiv, 357-359 (Aug., 1921); *Papeterie*, xliii, 688 (Aug. 10, 1921).—The pulp (in sheets) is fed into a hopper from which it passes into a chamber where it is thoroughly wetted by spraying and triturated by means of a powerful agitation. Means are provided for admitting steam to the chamber if desired. The pulp then passes into a truncated-cone shaped compartment in which are helical grooves as well as agitators. The function of the grooves is to make the pulp travel from the small end to the large end of the chamber, from which it is discharged.—A. P.-C.

Process for the Preparation of Halogen Quinone Derivatives from Pulp Waste Liquors, and Application of said Derivatives.—Fr. patent No. 508,894, *Papeterie Berges*, France, Aug. 5, 1920.—*Chimie et Industrie*, vi, 210 (Aug., 1921).—(A) *Alkaline Liquors*. The liquor is acidified with hydrochloric acid and treated with a halogen at 25-30°, after separating the precipitate formed on acidifying. It may be necessary, after acidifying, to treat with steam, which favors the action of the halogen. After drying the quinone derivatives are obtained as pastes, extracts, or powders. (B) *Sul-*

phite Liquors. The liquor is heated under pressure with an alkaline earth, and then treated with halogen, after acidification if need be. (C) *Liquors from Water or Steam Treatment*. The treatment is the same as above. The quinone derivatives thus obtained possess tanning properties and may be used for this purpose either alone or in admixture with other substances.—A. P.-C.

Width Indicator for Paper and Cardboard Machines.—Patent applied for by Charles Becker, July 12, 1921.—*Papeterie*, xliii, 746-748 (Aug. 25, 1921).—Wires are connected to the deckle strap carriages while the other ends are connected to some suitable indicating device, so that the distance between the deckle straps is read off directly. If desired, the graduations may be such as to give directly the width of the trimmed sheet.—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals from Which Abstracts Have Been Prepared for this Issue

Chem. Soc. Abs.	Journal of the Chemical Society—Abstracts, Gurney & Jackson, 33 Paternoster Row, London, E. C. 4, England.
Chimie et Industrie	Chimie et Industrie, 49 Rue des Mathurins, Paris, France.
China Clay Trade Rev.	China Clay Trade Review, 9-10 Southampton Bldgs., High Holborn, W. C. 2, London, England.
Helv. Chim. Acta	Helvetica Chimica Acta, Georg & Co., 10 Friestr., Basel, Corratier 10, Genève, Switzerland.
Monit. Papeterie Française	Le Moniteur de la Papeterie, Française, 154 Boulevard Haussmann, Paris (8°), France.
Paper Container	Paper Container, 29 Ludgate Hill, London E. C. 4, England.
Paper Making	Paper Making, 1 Mitre Court, Fleet street, London, E. C. 4, England.
Papeterie	La Papeterie, 9 Rue Lagrange, Paris (5°), France.
Papier	Le Papier, 16 Rue du Rocher, Paris (8°), France.

Woodlands Section Convention Program

Problems of reforestation by paper companies, the damage being done in the spruce forests by the bud worm, the waste in converting pulpwood into pulp are only a few of the subjects which are scheduled for discussion at the convention of the Woodlands Section of the American Paper and Pulp Association on Tuesday, April 11, during the annual convention of the paper industry in New York City.

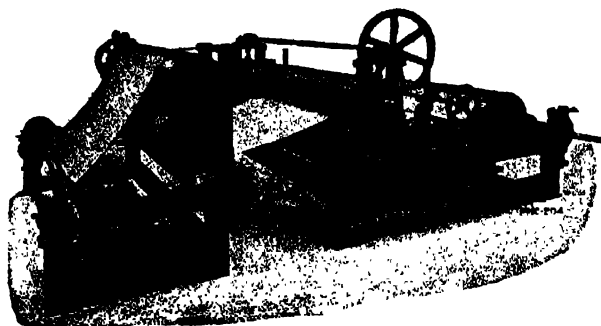
P. T. Coolidge of Bangor, Me., and Ellwood Wilson of the Laurentide Company of Quebec, under the head of "Successful Reforestation for Pulp and Paper Companies" will discuss such problems as conditions favoring reforestation, natural vs. artificial reforestation and methods used, planting as a safe investment, fire prevention, desirable species, methods and costs of planting, and the great problem of whether the present timber supply warrants extensive reforestation.

E. W. Kiefer of the Port Huron Sulphite and Paper Company will discuss under the subject of "Pulps and Pulpwood," the number of pounds of pulp paid for in a cord of wood, how many pounds per cord go into the grinders or digesters, and the percentages of bark water and waste in the wood.

Insect damage will be discussed by Dr. Hopkins of the Federal Bureau of Entomology, and W. R. Hastings, State Forester of Vermont. Other subjects are "Labor Saving Machinery for Woods Operations," George H. Anson, Abitibi Power and Paper Company; "Company Woods Operations vs. Contracted Woods Operations," D. A. Crocker, Eastern Manufacturing Company, Bangor, Me.; "Pulpwood Contracts; Percentages to Contractors when Wood is Peeled, Sawed and Yarded to Haul," J. O. Lynch, Lincoln Pulpwood Company; "What Can a Forester Do for a Paper Company?" Julian Rothery, New York City; "Rossing at the Mills vs. Rossing in the Woods," H. B. Morse, Orono Pulp and Paper Company; "Advisability of Cutting Pulp Wood to a 3 inch Diameter Limit," G. B. Wells, John Schroeder Lumber Company; "Intensive Local Fire Protection," E. S. Holloway and C. W. Hurtubis, Hammermill Paper Company, and "A Cost System for Logging Operations," G. A. Ware, News Print Service Bureau.

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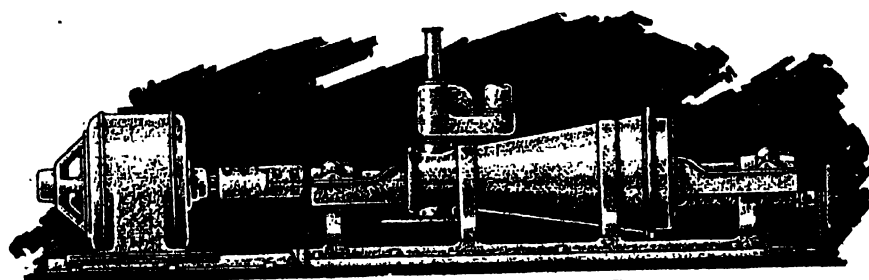
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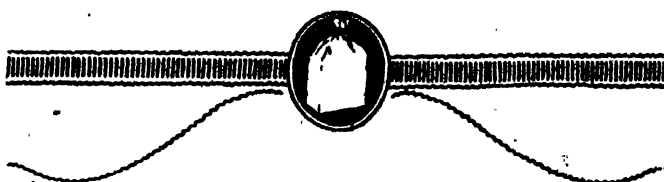
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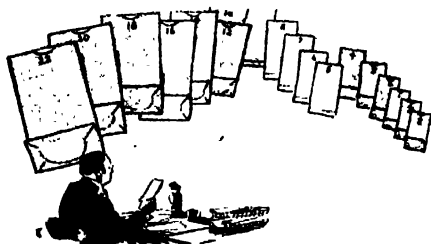
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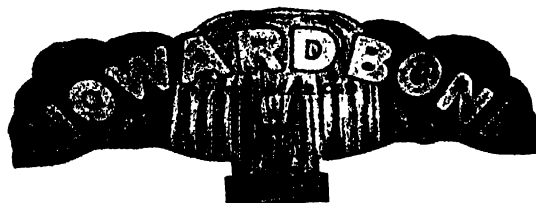


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WILLIAMSON COMPANY, Fall River, Mass. U.S.A.



Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING APRIL 1, 1922

SUMMARY

News Print	2,413 rolls, 592 bla.
Wrapping Paper	10,132 rolls, 639 bla., 7 cs.
Packing Paper	171 bla., 298 rolls, 24 cs.
Cigarette Papers	2,038 cs.
Wall Paper	298 rolls, 50 bla.
Hangings	50 bla., 8 cs.
Drawings	12 cs.
Crossed Paper	6 cs.
Surface Coated Papers	71 cs.
Tissue Paper	5 cs.
Filter Paper	10 cs.
Emery Paper	19 cs.
Printing Paper	33 cs.
Miscellaneous Paper	255 cs., 209 bla.

CIGARETTE PAPER

American Tobacco Co., Zarembo, Havre,	130 cs.
Rose & Frank, by same,	100 cs.
British Amer. Tobacco Co., Celtic, Liverpool,	18 cs.
R. J. Reynolds Tobacco Co., E. Crag, Bordeaux,	870 cs.
American Tobacco Co., by same,	700 cs.
American Tobacco Co., La Lorraine, Havre,	158 cs.
The Surbrug Co., by same,	22 cs.

WALL PAPER

The Prager Co., Kroonland, Antwerp,	298 rolls.
A. C. Dodman Jr., Inc., by same,	8 bla.
A. Murphy & Co., Wurttemberg, Hamburg,	39 bla.
A. Murphy & Co., Menominee, London,	3 bla.

PAPER HANGINGS

A. Murphy & Co., Menominee, London,	1 bl.
W. H. S. Lloyd & Co., by same,	12 bla.
W. H. S. Lloyd & Co., Montana, London,	37 bla.
W. H. S. Lloyd & Co., by same,	8 cs.

DRAWING PAPER

Fanos Ruhl & Co., Menominee, London,	5 cs.
H. Reeve Angel & Co., Rotterdam, Rotterdam,	7 cs.

COLORED PAPER

Borden Riley Paper Co., Kroonland, Antwerp,	6 cs.
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SURFACE COATED PAPER

Defender Photo-Supply Co., Kroonland, Antwerp,	71 cs.
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TISSUE PAPER

C. H. Wyman, Celtic, Liverpool,	5 cs.
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FILTER PAPER

E. H. Dauriger, Wurttemberg, Hamburg,	4 cs.
H. Reeve Angel & Co., Rotterdam, Rotterdam,	6 cs.

EMERY PAPER

E. Dietzgen & Co., Chicago, Havre,	19 cs.
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PRINTING PAPER

B. F. Drakenfeld & Co., Celtic, Liverpool,	9 cs.
C. Steiner, Wurttemberg, Hamburg,	5 cs.
H. Lindenmeyr & Sons, Menominee, London,	19 cs.

PACKING PAPER

Birn & Wachenheim, Noordam, Rotterdam,	24 cs.
Int'l Acceptance Bank, Stavangerfjord, Kristiania,	162 bla.
Int'l Acceptance Bank, by same,	75 rolls.
Irving Nat'l Bank, by same,	223 rolls.
Nat'l Bank of Commerce, by same,	9 bla.

WRAPPING PAPER

M. O'Meara Co., Sturholm, Gothenburg,	157 rolls.
M. O'Meara Co., by same,	730 rolls.
Diern & Wing Paper Co., by same,	8 rolls.
C. K. MacAlpine, by same,	216 rolls.
C. K. MacAlpine, by same,	105 bla.
Arkell Safety Bag Co., by same,	2 rolls.
Arkell Safety Bag Co., by same,	460 rolls.
Coy Hunt Co., by same,	39 rolls.
M. M. Cohen, by same,	134 bla.
M. M. Cohen, by same,	20 bla.
F. C. Strype, by same,	12 bla.
Peoples Trust Co., by same,	2,199 rolls.

H. Lindenmeyr & Sons, by same,	766 rolls.
H. Lindenmeyr & Sons, by same,	97 bla.
P. Garvan, by same,	27 bla.
Brown Bros., by same,	49 bla.
Atlantic Nat'l Bank, by same,	379 rolls.
D. S. Walton & Co., by same,	4,034 rolls.
D. S. Walton & Co., by same,	753 rolls.
D. S. Walton & Co., by same,	151 bla.
Ladenburg Thalman & Co., Bradford City, Ham-	burg, 7 cs.
Irving Nat'l Bank, Londonier, Antwerp,	44 bla.

NEWS PRINT

Nat'l Bank of Commerce, Stavangerfjord, Kris-	tiania, 369 rolls.
F. A. Munsey & Co., Sorland, Hango,	961 rolls.
Parsons & Whittemore, by same,	381 bla.
Irving Nat'l Bank, by same,	30 rolls.
Agar Bernsson Corp., Bradford City, Hamburg,	375 rolls.
Chemical Nat'l Bank, by same,	540 rolls.
Hudson Trading Co., Mt. Clinton, Hamburg,	100 bla.
Hudson Trading Co., Georgian, Hamburg,	111 bla.
Hudson Trading Co., by same,	148 rolls.

PAPER

P. C. Zuhke, Lapland, Antwerp,	30 cs.
Kern Com'l Co., Rotterdam, Rotterdam,	61 cs.
Irving Nat'l Bank, Wurttemberg, Hamburg,	7 cs.
Hensel, Bruckman & Lorbacher, by same,	5 cs.
Berger & Wirth, by same,	7 cs.
American Express Co., Phoebe, Marseilles,	23 cs.

A. Bleyer & Co., Sorland, Hango,	209 bla.
Japan Paper Co., Vesuvio, Genoa,	31 cs.
P. C. Zuhke, Kroonland, Antwerp,	72 cs.
Pitt & Scott, La Lorraine, Havre,	4 cs.
Judson Freight Forward'g Co., by same,	9 cs.
Stern Bros., by same,	6 cs.

RAGS, BAGGINGS, ETC.

W. Hughes & Co., Noordam, Rotterdam,	241 bla.
Castle, Gotthel & Overton, Inkum, London,	59 bla. rags.
Castle, Gotthel & Overton, by same,	2 bla. new-
cuttings.	
Guaranty Trust Co., Kroonland, Antwerp,	162 bla.
Guaranty Trust Co., Celtic, Liverpool,	77 bla.
rags.	
Brown Bros. & Co., by same,	8 bla. cottonwaste.
E. J. Keller Co., Inc., by same,	1 bl. flaxwaste.
H. D. Kaplan & Co., by same,	301 bla. rags.
Mutnick Bros., by same,	163 bla. rags.
Albion Trading Co., by same,	23 bla. rags.
J. B. Morris & Co., by same,	180 bla. hidecuttings.
Amer. Exchange Nat'l Bank, Londonier, Ant-	werp, 36 bla. flaxwaste.
Guaranty Trust Co., by same,	4 bla. rags.
F. W. Frost & Co., E.g. Castle, Shanghai,	126 bla. cottonwaste.
R. F. Downing & Co., Montana, London,	21 bla. rags.
Salomon Bros. & Co., Phoebe, Genoa,	84 bla. cottonwaste.
Ladenburg Thalman & Co., by same,	149 bla. cottonwaste.
E. J. Keller Co., Bradford City, Hamburg,	7 bla. rags.
Castle, Gotthel & Overton, by same,	40 bla. rags.
P. Berlowitz, by same,	222 bla. rags.
L. H. Abenheimer, by same,	850 bla. rags.
Parsons & Whittemore, by same,	1,250 bla. rags.
E. Butterworth & Co., Balsam, Belfast,	25 bla. paperstock.
J. Spunt & Co., Moorish Prince, Shanghai,	260 bla. cottonwaste.
Albion Trading Co., Virgilla, London,	41 bla. rags.
E. J. Keller Co., Inc., Potomac, Bremen,	34 bla. rags.
E. J. Keller Co., Inc., Pen. State, Bremen,	89 bla. rags.
E. J. Keller Co., Inc., Dallas, Hamburg,	200 bla. rags.
E. J. Keller Co., Inc., Dallas, Hamburg,	162 bla. bagging.
E. J. Keller Co., Inc., Rochambeau, Havre,	36 bla. rags.
E. J. Keller Co., Inc., Chickasaw, Hamburg,	55 bla. flaxwaste.
Mutnick Bros., Galileo, Hull,	28 bla. rags.
Castle, Gotthel & Overton, Galileo, Hull,	73 bla. rags.

Stone Bros. & Sherwin, Chicago, Havre,	120 bla. rags.
Allison Trading Co., Chicago, Havre,	18 bla. rags.

OLD ROPE

E. J. Keller Co., Inc., Rotterdam, Rotterdam,	79 coils.
International Purchasing Co., Boston City, Bris-	tol, 88 coils.
International Purchasing Co., Galileo, Hull,	271 coils.
American Express Co., Chicago, Havre,	352 coils.
Helpe Bros., Emilia, Trieste,	69 coils.
E. J. Keller Co., Inc., Noordam, Rotterdam,	324 coils.
E. J. Keller Co., Inc., Kroonland, Antwerp,	127 coils.
Atlantic National Bank, Londonier, Antwerp,	142 coils.
Atlantic National Bank, Londonier, Antwerp,	15 bla.

WOOD PULP

Tidewater Paper Mills Co., Evelyn Wilkie, Liver-	pool N. S., 5,540 bales, 554 tons.
L. M. Sergeant Co., Stavangerfjord, Kristiania,	1,530 bales.
A. J. Pagel & Co., Inc., by same,	300 bales.
First Nat'l Bank of Boston, by same,	200 bales.
J. Anderson & Co., by same,	1,110 bales.
American Wood Pulp Corp., Wurttemberg,	Hamburg, 3,150 bales, 637 tons.
Hudson Trading Co., Sudbury, Hamburg,	488 bales.
Lagerloef Trading Co., Sorland, Hango,	55 rolls wood pulp boards, 2,635 bla. wood pulp boards, 25 tons.
Hudson Trading Co., Shierholm, Gothenburg,	467 bla. wood pulp.

WOOD FLOUR

B. L. Lohetski, Stavangerfjord, Kristiania,	726 bags.
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PHILADELPHIA IMPORTS

WEEK ENDING APRIL 1, 1922

Dill & Collins, Sw. Miller, London,	366 bla. Waste paper.
H. Reeve Angel & Co., Sorland, Hango,	70 bla. writing paper.
Phila. Nat'l Bank, by same,	68 bla. writing paper.
Pulp & Paper Trading Co., by same,	430 recls news print.
Canfield Paper Co., by same,	902 rolls printing paper.
Paper House of Pennsylvania, by same,	392 bla. printing paper.
Paper House of Pennsylvania, by same,	1,574 rolls printing paper.
W. Larzaler, Lapland, Antwerp,	1,198 rolls wall paper.
E. J. Keller Co., Inc., Chappaqua, Hamburg,	986 bla. rags.
Castle, Gotthel & Overton, E. Soldier, Rotter-	dam, 784 bla. rags.
Castle, Gotthel & Overton, Mackinaw, Ham-	burg, 24 rolls news print.

BOSTON IMPORTS

WEEK ENDING APRIL 1, 1922

J. Anderson & Co., Sturholm, Gothenburg,	500 bla. wood pulp.
Scandinavian Amer. Lead Co., by same,	2,262 bla. wood pulp.
M. Gottesman & Co., Inc., by same,	500 bla. wood pulp.
A. J. Pagel & Co., Inc., by same,	3,500 bla. wood pulp.
H. Borregaard Co., by same,	1,975 bla. wood pulp.
Foreign Paper Mills, Inc., by same,	1,380 recls news print.
Foreign Paper Mills, Inc., by same,	166 bla. news print.
Safepack Mills, by same,	2 rolls wrapping paper.
E. J. Keller Co., Inc., Themisto, Hamburg,	98 bla. rags.

(Continued on page 60)



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To their correct design and to the supreme care used in making them may be attributed the unvarying dependability of Jenkins Valves.

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Valves of brass, iron, and steel in types and sizes for power plants, plumbing, heating, and industrial service.

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Montreal London



Fig. 106. Jenkins Standard Brass Globe Valve.

Jenkins Valves

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EVERYTHING IN PULP & PAPER

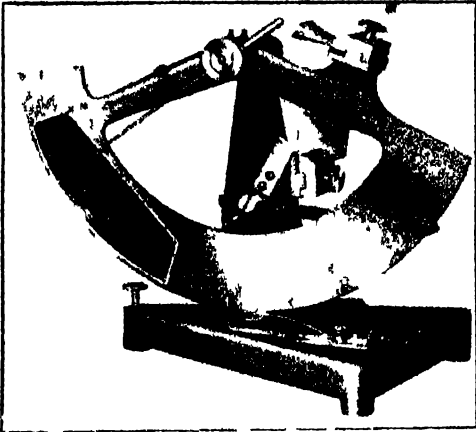
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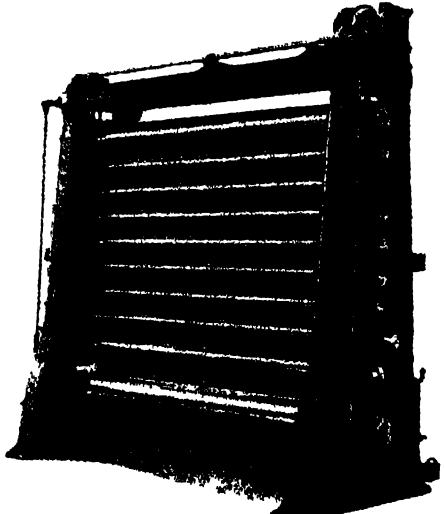
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Wilmington, Del., U. S. A.

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL.
WEDNESDAY, April 5, 1922.

It will be remembered that a tortoise won a historical race with a hare once upon a time. The moral of that momentous race should give considerable encouragement to the paper industry in general and to the New York market in particular, where progress is surely quite slow enough to be victorious and enduring. Although there was little change in the general financial condition during the last month, an advance of some four points was scored by the Federal Reserve Board against the index number of wholesale prices, indicating basic improvement. Credit has relaxed slightly and along with other factors higher prices for agricultural products have operated to bring about a slight betterment in domestic circles. Steadily a firm foundation is being relaid for business. No pre-war normalcy will be visible until international trade is again moving freely on a large scale, nor until worldwide industry is once more on a competitive basis. When the awaited day arrives the wholly healed economic sores will again permit the body of manufacture and trade to so function that the debtor nations will regain their feet and by meeting their obligations greatly strengthen the entire fabric of business. The coal situation draws little attention from paper interests. The large companies are well supplied for several months, and a long strike period is not anticipated. The administration shares the disinterest and intends to interfere only in the eventuality of violence. The more pessimistically inclined paper men are now inclined to see the turning point ahead and better feeling is more common in all quarters.

The condition of news print continues to encourage the trade. Consumption is greater than last year by far and production is less, so that the usual surplus should be lacking in volume and importance. The market is gaining steadily in strength, and if the present movement is maintained stocks at mills will soon be as low as in 1920, when a very active demand was precipitated. The consumption for the current year bids fair to exceed that of any year, so before long mill production should be at capacity and should permit of some profit-taking once more. It is well that the march of consumption is forward, for news print selling at \$70 a ton manufactured under present conditions actually represents a loss when checked up against all costs, including overhead. 82,482 tons of news print were imported in January this year against 69,448 tons in January, 1921. Exports in January of this year were 2,537 tons as against 2,247 tons in January, 1921.

Movement of book paper is rather sluggish still, but at the bottom of things are much firmer and feeling is more confident and optimistic. Salesmen find that orders are to be had upon the expenditure of an extra effort, but not in any great volume in any case. The schedule of prices is steady. Book paper mills are becoming more active, yet there is still opportunity for improvement which will permit of selling prices fair to manufacturer and consumer alike.

The general trend of the fine paper market is forward, but a more or less spotty condition prevails, first allowing a rather encouraging week and then showing a falling off in sales. The hand-to-mouth demand is in great disfavor with the mills, and ideal conditions will not be attained until more confidence is established and contracts are renewed. The cheaper grades of sulphite bonds are most popular and apparently are satisfying the demand for a less costly product.

Tissue is very quiet, apparently resting after the comparatively energetic production of January and February. For a part of those two months it was difficult to obtain a car of tissue, but the artificially created demand could not hold, and listlessness has come for another stay which it is hoped will be temporary.

Kraft shows little change. The demand continues steady and is in sufficient volume to account for the production of some of the

large mills for several weeks in advance. The kraft market was one of the first to recover from the worst of the depression and has been able to allow manufacturers a fair return for some time. Capacity production is essential for the economic operation of paper mills where the overhead is an all-important factor, and the kraft department has been more fortunate than other branches in being able to keep busy most of the time.

Board is dull. The demand is best for folding boxboard and a revival of interest on the part of merchandisers gives legitimate rise to the belief that fundamental conditions are getting better. Mills are not operating at capacity and some are still shut down. Prices are fairly steady and any revision is expected to be downward.

Mechanical Pulp

No change has been registered during the week in the mechanical pulp line. The demand is light and handled easily by the increasing stocks of pulp at the grinder plants. Prices show no change, but lack firmness, and a tendency to shade them is present when sufficient pressure is brought to bear by the consumers.

Chemical Pulp

Chemical pulp is just barely able to hold what advance it has made without revealing any very startling activity. The demand is light and apparently hampered by high freight schedules. Lower rates are promised the trade and should assist greatly in breaking the comparative isolation in which the distant points find themselves as regards large shipments. Improvement is looked for and price changes are not liable to be of much consequence until fall.

Old Rope and Bagging

The interest in old rope and bagging is fair, but orders of sufficient volume to permit of much profit are almost wholly lacking. Inquiries from the mills are encouraging and indicate that a goodly amount of business is standing in the offing, ready to become a factor when a little more confidence is generated.

Waste Paper

Waste paper is only moderately active with a temporary lull resting on the market. Small margins of profit allowed are not conducive to the expenditure of much energy in collecting and barely compensate for the cost involved. No great quantity of over issue news is on the market and so the commodity is fairly strong. A tendency to hold out for the selling price offered is becoming more apparent among dealers and indicates more confidence and returning strength.

Rags

The rag market is ragged and spotty. Prices quoted mean very little and dealers are at a loss to understand the almost total lack of interest on the part of those who are usually in the market. Inquiries continue in fair number and some betterment is anticipated as the mills are running better.

Twine

Twine is firmer and markedly better than at the same time last year. Dealers are encouraged by the showing and expect the slow expansion of better feeling to continue.

High Water in Connecticut Closes Mills

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., April 3, 1922.—High water in the Connecticut River necessitated the closing down of some of the paper mills on the third level canal during the past week. The water reached its highest mark on Thursday night, when 8.7 feet of water were flowing over the Holyoke dam.

The Windsor paper mill at Windsor Locks, Conn., was obliged to shut down during the past week because of high water. The water backed up on mill wheels, curtailing the power. The Connecticut River rose to a height of 14 feet during the week.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations April 4, 1922.

STOCKS.	BID	ASKED
American Writing Paper Company, pref.	27½	29
International Paper Company, com.	46	46½
International Paper Company, pref., stamped.	66	66½
Jalco Bag & Paper Corporation.	61	61½

Because of the unusual conditions prevailing in the various markets quotations are more or less nominal

Paper	F. o. b. Mill.
Ledgers	10.50 @ 30.00
Bonds	8.50 @ 55.00
Writings—	
Extra Superfine	13 @ 25
Superfine	14 @ 20
Tub Sized	10 @ 16
Engine Sized	9.00 @ 15.00
News—f. o. b. Mill—	
Rolls, contract	3.50 @ —
Rolls, transit	3.50 @ 3.75
Sheets	4.00 @ —
Side Run	3.25 @ 3.50
Book, Case—f. o. b. Mill	
S. & S. C.	6.70 @ 7.50
M. F.	6.00 @ 7.25
Coated and Enamel	8.00 @ 10.00
Lithograph	8.00 @ 10.00
Tissues—f. o. b. Mill	
White, No. 1	.75 @ .80
Colored	1.00 @ 2.00
Anti-Tarnish	.75 @ .80
Silver Tissue	1.50 @ 2.70
Manila	.75 @ .80
Kraft—f. o. b. Mill—	
No. 1 Domestic	7.00 @ 7.25
No. 2 Domestic	5.75 @ 6.50
Imported	5.75 @ 6.00
Screenings	2.50 @ 3.50
Manila—	
No. 1 Jute	8.50 @ 9.00
No. 2 Jute	7.75 @ 8.50
No. 1 Wood	4.50 @ 5.50
No. 2 Wood	4.00 @ 4.50
Butchers	4.25 @ 4.75
Fiber Papers—	
No. 1 Fiber	6.00 @ 6.25
No. 2 Fiber	5.25 @ 5.50
Common Bogus	1.75 @ 2.25
Card Middles	4.00 @ 5.00
Boards—per ton—	
News	37.50 @ 45.00
Straw	40.00 @ 45.00
Chip	36.50 @ 40.00
Binders' Board	60.00 @ 70.00
Sgl. Mla Li Chip	57.50 @ 65.00
Wood Pulp	75.00 @ 90.00
Container	65.00 @ 70.00
Wax Paper—	
Self Sealing White	
28 and 30 lb.	
basis	10.00 @ 11.00
Waxed Tissue	1.40 @ 1.60
Glassine—	
Bleached, basis 25	12.75 @ 13.25
lbs.	
Bleached, basis 20	13.75 @ 15.25
lbs.	

Mechanical Pulp

(Ex-Dock.)

No. 1 Imported	34.00 @ 36.00
(F. o. b. Pulp Mills.)	
No. 1 Domestic	29.00 @ 31.00

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—	
Bleached	4.25 @ 5.00
Easy Bleaching	3.00 @ 3.25
No. 1 Strong unbleached	2.75 @ 3.00
No. 2 Strong unbleached	2.50 @ 2.75
No. 1 Kraft	2.75 @ 3.00
Sulphate—	
Bleached	4.00 @ 4.25
(F. o. b. Pulp Mill.)	
Sulphite (Domestic)—	
Bleached	4.15 @ 5.00
Strong unbleached	2.50 @ 3.00
Easy Bleaching	
Sulphite	2.50 @ 3.25
News Sulphite	2.25 @ 2.75
Mitscherlich	3.25 @ 3.50
Kraft (Domestic)	2.50 @ 3.00
News Bleached	3.75 @ 4.00

Domestic Rags

Prices to Mill, f. o. b. N. Y.	
New White, No. 1	9.75 @ 10.00
New White, No. 2	6.00 @ 6.50
Silesias, No. 1	6.00 @ 6.50
New Unbleached	8.50 @ 9.00
Washables	3.25 @ 3.50
Fancy	4.50 @ 5.00
Cottons—according to Grades—	
Blue Overall	5.75 @ 6.00
New Blue	4.00 @ 4.50
New Black Soft	3.25 @ 3.50
New Light Sec.	
onds	2.75 @ 3.00
O. D. Khaki Cuttings	3.25 @ 3.50
Men's Corduroy	2.50 @ 2.75
New Canvas	6.50 @ 7.00
New Black Mixed	2.75 @ 3.25
Old	
White, No. 1—	
Repacked	5.75 nominal
Miscellaneous	4.50 nominal
White No. 2—	
Repacked	3.00 nominal
Miscellaneous	2.25 nominal
St. Soiled White	1.50 nominal
Thirde and Blues—	
Repacked	1.50 nominal
Miscellaneous	1.10 nominal
Black stockings	2.15 nominal
Cloth Strippings	1.05 nominal
No. 1	1.10 nominal
No. 2	.90 nominal
No. 3	.70 nominal
No. 4	.70 nominal
No. 5A	.90 nominal

Foreign Rags

New Light Silesias	6.00 nominal
Light Flannelettes	6.75 nominal
Unbleached Cottons	7.50 nominal
New White Cuttings	9.50 nominal
New Light Oxfords	6.00 nominal
New Light Prints	4.50 nominal
New Mixed Cuttings	nominal
New Dark Cuttings	1.90 @ 2.10
No. 1 White Linens	9.50 @ 11.00
No. 2 White Linens	6.50 nominal
No. 3 White Linens	5.00 nominal
No. 4 White Linens	3.50 nominal
Old Extra Light Prints	2.25 nominal
Ord. Light Prints	1.75 nominal
Med. Light Prints	1.50 nominal
Dutch Blue Cottons	2.10 nominal
German Blue Cottons	1.65 nominal
Ger. Blue Linens	3.50 nominal
Checks and Blues	1.50 nominal
Dark Cottons	1.10 nominal
Shoppery	.95 @ 1.00
French Blues	2.00 nominal

Bagging

Prices to Mill f. o. b. N. Y.	
Gunny No. 1—	
Foreign	.75 @ .80
Domestic	.75 @ .80
Wool, Tares, light	1.20 @ 1.30
Wool, Tares, heavy	1.25 @ 1.40
Bright Bagging	1.00 @ 1.10
No. 1 Scrap	.90 @ 1.00
Sound Bagging	.75 @ .85
Manila Rope—	
Foreign	4.50 @ 4.75
Domestic	4.75 @ 5.00
New Bu Cut	2.00 @ 2.15
Hessian Jute Threads—	
Foreign	4.25 @ 4.50
Domestic	4.40 @ 4.75
Mixed Strings	.90 @ 1.00

Twines

Cotton— (F. o. b. Mill.)	
No. 1	32 @ 34
No. 2	30 @ 32
No. 3	26 @ 28

India, No. 6 basis—	
Light	17 @ 18
Dark	17 @ 18
B. C. 18 Basis	38 @ 40
A. B. Italian, 18	
Basis	50 @ 60
Finished Jute—	
Light, 18 basis	25 @ 26
Dark, 18 basis	26 @ 28
Jute Wrapping, 3-6	
Fly—	
No. 1	22 @ 23
No. 2	30 @ 31
Tube Rope—	
4-ply and larger	14 @ 16
Fine Tube Yarn	18 @ 20
5-ply and larger	19 @ 21
4-ply	20 @ 22
3-ply	20 @ 22
Unfinished India—	
Basis	15 @ 16
Paper Makers Twine	
Balls	12 @ 14
Box Twine, 2-3 ply	16 @ 17
Jute Rope	12 @ 14
Amer. Hemp, 6	32 @ 34
Sisal Hay Rope—	
No. 1 Basis	14 @ 16
No. 2 Basis	12 @ 14
Sisal Lath Yarn—	
No. 1	13 @ 14
No. 2	10 @ 12
Manila Rope	17 @ 18

Old Waste Papers

(F. o. b. New York)

Shavings—	
Hard, White, No. 1	3.75 @ 4.00
Hard, White, No. 2	3.00 @ 3.25
Soft, White No. 1	3.00 @ 3.10
Flat Stock—	
Stitchless	1.50 @ 1.60
Over Issue Mag.	1.50 @ 1.60
Solid Flat Book	1.40 @ 1.50
Crumpled No. 1	1.10 @ 1.15
Solid Book Ledger	2.00 @ 2.25
Ledger Stock	1.60 @ 1.65
No. 1 White News	1.50 @ 1.60
New B. B. Chips	.47½ @ .52½
Manillas—	
New Env. Cut	2.75 @ 2.90
New Cut No. 1	1.90 @ 2.00
Extra No. 1, Old	1.60 @ 1.70
Print	.90 @ 1.00
Container Board	.70 @ .80
Bogus Wrapper	.55 @ .60
Old Krafts, machine compressed	
Bales	1.85 @ 2.00
News—	
Strictly Overissue	.75 @ .85
Strictly Folded	.60 @ .65
No. 1 Mixed Paper	.50 @ .52½
Common Paper	.35 @ .40

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper	F. o. b. Mill.
All Rag Bond	35 @ 40
No. 1 Rag Bond	30 @ 35
No. 2 Rag Bond	18 @ 20
Water Marked Sulphite	10 @ 14
Sulphite Bond	9 @ 12
Sulphite Ledger	12 @ 13
Superfine Writing	18 @ 24
No. 1 Fine Writing	14 @ 22
No. 2 Fine Writing	12 @ 20
No. 3 Fine Writing	8 @ 12
No. 1 M. F. Book	6½ @ 7
No. 1 S. & S. C. Book	6½ @ 7½
Coated Book	8½ @ 10½
Coated Label	8½ @ 10½
News—Rolls, mill	3½ @ 4½
News—Sheets, mill	3½ @ 4½
No. 1 Manila	5½ @ 6
No. 1 Fiber	5 @ —
No. 2 Manila	4½ @ —
Butchers' Manila	4 @ —
No. 1 Kraft	7 @ —
No. 2 Kraft	6 @ —
Wood Tag Boards	4 @ —
Screenings	2½ @ —
Boards, per ton—	
Plain Chip	35.00 @ 40.00
Solid News	40.00 @ 45.00
Manila Lined	
Chip	45.00 @ 52.50
Container Line—	
85 Test	60.00 @ 65.00
100 Test	65.00 @ 70.00

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper	
Bonds	.10 @ .60
Ledgers	.15 @ .40
Writings—	
Superfine	.15 @ .20
Extra fine	.12 @ .22
Fine	.20 @ .30
Fine, No. 2	.20 @ .25
Fine, No. 3	.15 @ .20
Book, M. F.	.06 @ .09
Book, S. S. & C.	.08 @ .15
Book, Coated	.08 @ .15
Coated Lithograph	.10 @ .15
Label	.08 @ .15
News	.05 @ .07
No. 1 Jute Manila	.12 @ .13
Manila Sul.	.08 @ .08½
Manila No. 2	.07½ @ .08
No. 2 Kraft	— @ .08½
No. 1 Kraft	— @ .09½
Common Bogus	.02½ @ .03
Straw Board	35.00 @ 45.00
News Board	32.50 @ 35.00
Chip Board	27.50 @ 32.00
Wood Pulp Board	90.00 @ 100.00
(Carload Lots)	
Binder Boards—	
Per ton	\$65.00 @ 75.00
Carload lots	60.00 @ 65.00
Tarred Felts—	
Regular	48.00 @ 50.00
Slaters	54.00 @ 56.00

(Continued on page 62)

Imports and Exports of Paper and Paper Stock

(Continued from page 56)

BALTIMORE IMPORTS

WEEK ENDING APRIL 1, 1922

E. J. Keller Co., Inc., Vauclon, Bordeaux, 880 bla. rags
E. J. Keller Co., Inc., Gorredyk, Rotterdam, 1,143 bla. rags
E. J. Keller Co., Inc., Eastern Sea, Antwerp, 1,000 bla. wood pulp.
C. L. Robinson, Stureholm, Gothenburg, 1,000 bla. wood pulp.
Scandinavian Amer. Trading Co., by same, 3,786 bla. wood pulp.
E. M. Sergeant Co., by same, 1,750 bla. wood pulp.
M. Gottesman Co., Inc., by same, 1,000 bla. wood pulp.
A. J. Pagel & Co., Inc., by same, 3,500 bla. wood pulp.

The Borregaard Co., by same, 1,500 bla. wood pulp.
Irving Nat'l Bank, by same, 326 reels paper.
Irving Nat'l Bank, by same, 90 bla. paper.

NEW ORLEANS IMPORTS

WEEK ENDING APRIL 1, 1922

Hudson Trading Co., E. Hugo Stinnes, Hamburg, 441 rolls news print.
New Orleans Item Co., Stureholm, Gothenburg, 88 rolls news print.
C. L. Robinson, by same, 240 rolls news print.
Canal Com'l Trust & Savings Bank, by same, 82 ca. paper.
Canal Com'l Trust & Savings Bank, by same, 1,441 reels wrapping paper.
F. Naumburg & Co., by same, 815 reels wrapping paper.

Atlanta Paper Co., by same, 922 reels wrapping paper.
Atlanta Paper Co., by same, 655 rolls wrapping paper.
Atlanta Paper Co., by same, 22 bla. wrapping paper.
Southern Paper Co., Ltd., by same, 35 bla. wrapping paper.
Southern Paper Co., Ltd., by same, 1,885 reels wrapping paper.
R. G. de la Fuente, by same, 700 bla. wood pulp.
E. J. Keller Co., Inc., Einfeld, Hamburg, 504 bla. bagging.
E. J. Keller Co., Inc., Emergency Aid, Bremen, 440 bla. rags.

GALVESTON IMPORTS

WEEK ENDING APRIL 1, 1922

Hudson Trading Co., Afel, Hamburg, 326 rolls news print.

SLOW BUT STEADY EXPANSION IN TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., April 3, 1922.—Business in the paper line continues to pick up slowly but steadily and each week sees greater confidence manifested and more orders placed, although the latter are for the most part small in volume and wanted at once. There is a disposition on the part of numerous purchasers to ask for delivery as soon as possible and they can not as yet be induced to give bookings calling for shipments at some future rate. Stocks for the most part are low. Generally speaking, conditions in the industry are on a much better footing than they were a year ago, but recovery is a rather slow process and the return to normal conditions is not accomplished in a few weeks. However, things are now headed in the right direction. There have been no price changes and it is reported no further alteration in quotations are likely to occur for many weeks. Manufacturing stationers and envelope makers report that trade is improving and the outlook is getting brighter.

Barber-Ellis Erecting New Warehouse

Barber-Ellis, Limited, are erecting a new warehouse on Adelaide street west, near Spadina avenue. The building will be four stories high, with basement, and contains several thousand square feet. The company expects to remove from its present premises, 71 Wellington west to its new home in July next. John F. Ellis, the veteran head of the company, who is a former president of the Canadian Paper Trade Association, says that the envelope and stationery factories of the firm in Brantford and Winnipeg are fairly busy at the present time and business is improving right along.

Much Pulpwood Being Shipped

The Thompson & Heyland Lumber Company, extensive dealer in pulpwood which is shipped to the Niagara district, New York, Pennsylvania and other states, has purchased about forty thousand cords this season and over twenty-five thousand cords have already been shipped. The firm is sending out about fifteen carloads each day from Northern Ontario and has bought wood as far north as seven hundred miles from Toronto. The price paid for spruce and balsam peeled is from nine to eleven dollars, while rossed wood is commanding from one to two dollars more per cord. There is very little demand for poplar. All the wood along the tracks on the Temiskaming and Northern Ontario railway and the National Transcontinental line in Ontario is being shipped out rapidly, although large quantities are reported to be alongside the rails in eastern Quebec. It is thought the demand for pulpwood will pick

up considerably during the coming season owing to the mills which had large surplus stocks on hand, getting busier and using up their available supplies.

Big Decrease in Lumber Cut

The lumber and pulpwood cut in Ontario fell off perceptibly during the past season. In 1921 the cut in the Georgian Bay and Northern Ontario district was 485,253,651 feet, a decrease of 104,403,865 from the corresponding period of 1920. In the Ottawa Valley the total lumber cut in 1921 was 236,660,764 feet as compared with 273,825,631 in 1920 and 297,950,350 in 1919. Lumber prices during the past year decreased on the average from 30 to 60 per cent and many operators have considerable of last year's stock in their yards. The general opinion of the larger manufacturers is that there will be a steady and gradual improvement during the coming season, with prices ruling about the same figure as at present. The mills are reducing the wages of both their skilled and unskilled help.

Kraft Paper in Active Call

The Hodge-Sheriff Paper Company of Toronto, extensive distributor of kraft paper, reports that March was the best month it has had in the past year and a half. The plant of the Wayagamack Pulp and Paper Company at Three Rivers, Que., is running five machines to capacity. Mr. Sheriff says that all business allotted is desired in a hurry and it is difficult to get consumers to place orders ahead for their deliveries. Prices on kraft papers are holding firm and the Canadian market is very satisfactory.

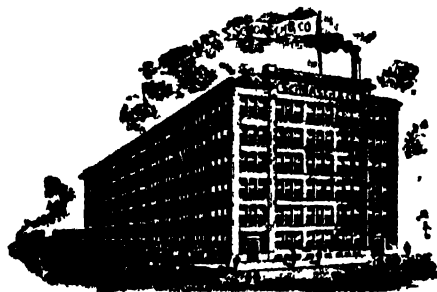
Veteran Paper Salesman Retires

Joseph Taylor, for many years a salesman with the Canada Paper Company, Toronto, who retired from the road a few months ago, has returned to Toronto after spending some time amid the scenes of his boyhood in Yorkshire, Eng. He is being welcomed back by many friends and will make his home in Toronto.

Closing Meeting of Forestry Club

The students of the fourth year attending the Faculty of Forestry, University of Toronto, have a club which meets regularly and is addressed by leading authorities. The closing meeting, held recently, was addressed by C. Nelson Gain, sales manager of the Don Valley Paper Mills, Toronto, who gave an instructive and illustrated address on the manufacture of pulp and paper in which he showed the close relationship between the forests and the pulp and paper industry of the province.

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PAPER BAGS

Sacks and Specialties

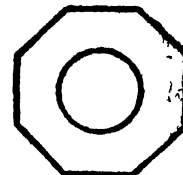
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"Beat the Stuff That's Hard to Beat"

They produce a fine, smooth, strong and uniform stock
When used in connection with tub-beaters they will save
25% to 50% of the time usually required in the tub beaters

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THE CLAFLIN ENGINEERING COMPANY
LANCASTER, OHIO

MG & UNGL KRAFT No. 1

of finest Scandinavian makes.

Excellent as Bag Material

Supplied in jumbo rolls, counter rolls and
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My Choice
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MANUFACTURERS OF
Self-Opening
Square and Flat Bags

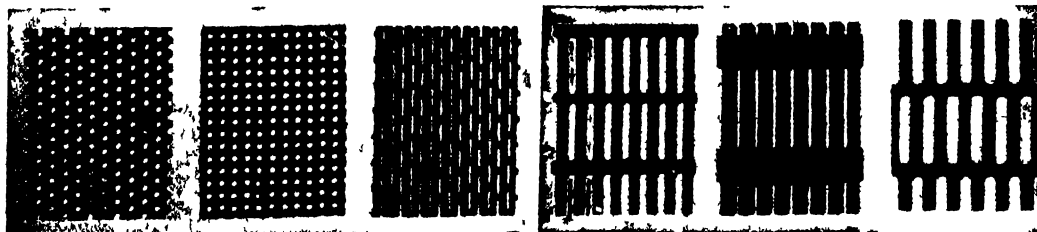
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Factory: Brooklyn, N. Y.

PERFORATED METALS

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shapes
of Holes*



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thicknesses
of Metal*

For Centrifugal and Rotary Screens, Drainer Bottoms, Filter Plates, Pulp Washers, etc.

The Harrington & King Perforating Company

618 No. Union Ave., Chicago, Ill., U. S. A.

New York Office, 114 Liberty St.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, April 5, 1922

BLEACHING POWDER—While the quantity of bleach consumed by the paper mills is larger than at this time last year, there is still a slack demand more or less accentuated by the textile strikes. The price is lower at 165 to 175 cents a pound for the domestic.

BLANC FIXE—Movement of blanc fixe is steady but light, with a restricted demand from the paper mills. While activity is growing continually, pre-war normalcy is not anticipated by the conservative faction of the trade for a few years yet. Blanc fixe pulp is quoted at \$40 to \$50 a ton, and powdered blanc fixe is quoted at 350 to 375 cents a pound.

CASEIN—The market in casein is strong on account of the moderate supply just about balancing the light demand. Arrivals have been so light for some time that the price has been kept at a higher level than would have been occasioned otherwise. Casein is now quoted at 950 to 1000 cents a pound.

CAUSTIC SODA—The caustic soda spot market is much firmer due to the increased export demand. It is expected that domestic mills will require a large tonnage this year. Caustic is now quoted at 325 cents a pound contract.

CHINA CLAY—Dealers in china clay are very optimistic for the future, since a slightly stronger demand from the mills already indicates that operations have improved. Domestic unwashed sells at \$6 to \$8 a net ton, washed at \$8 to \$10, and imported at \$13 to \$18.

LIQUID CHLORINE—The demand for liquid chlorine is steady and increasing slightly. It is quoted at 550 to 700 cents a pound, in 100-pound cylinders, depending upon quality. Consumers using large quantities can obtain reduced prices.

ROSIN—The rosin market shows some improvement with a better showing from the foreign demand. Grades F, F, and G are still quoted at \$5.35 a pound at New York. Price is fairly steady and indications are that revision will be very slight for some time.

SALTCAKE—The movement of saltcake is more active and in goodly volume under the influence of better demand from the glass trade and some improvement in the inquiries from the paper mills. Chromecake is now quoted at \$18 a ton and acidcake at \$20 to \$21.

SATIN WHITE—Small lots of satin white to fill depleted stocks are most in demand. Stocks are kept low in expectation of firmer prices that it is hoped will be forthcoming soon. The price is 210 cents a pound slightly shaded in second hands.

SULPHUR—The sulphur trade is livening up with the general betterment in underlying economic conditions and is soon expected to approach a normal demand from the paper industry, where more mills are in operation and where a better feeling exists than formerly. Sulphur is quoted at about \$15 to \$16 a net ton at the mines and \$18 to \$19 f o b New York. The supply of sulphur is perhaps larger than at any time since production continued steadily throughout the depression in most quarters, for to shut down even temporarily necessitates a great loss with the present hot water system of mining.

STARCH—The starch market is fairly active, with tendency toward improvement, if any change at all may be noted. Prices are firm, with bags quoted at 222 cents a pound and barrels at 250 cents a pound carload quantities.

SULPHATE OF ALUMINA—The mills are consuming about the same volume of this commodity as for some time with a slightly firmer feeling apparent in general. The commercial grade sells at 140 cents a pound and the iron free at 200 to 225 cents a pound, depending upon packing and quantity.

SODA ASH—Soda ash is quiet, with the consuming demand still steady and light. It is quoted at 150 cents a pound, in bags, at the works.

Market Quotations

(Continued from page 59)

Solid Ledger Stock	2.00	2.25	New Black Soft	03	.034
Writing Paper	1.80	2.00	New Light Sec		
No. 1 Books, heavy	1.50	1.75	onds	.02	.024
No. 2 Books, light	1.25	1.50	Khaki Cuttings	.0234	.034
No. 1 New Manila	2.75	3.00	Corduroy	.02	.024
No. 1 Old Manila	1.50	1.75	New Canvas	.07	.074
Container Manila	1.00	1.10	New Black Mixed	2.75	2.80
Old Kraft	1.90	2.00			
Overseas News	.75	.80	White, No. 1—		
Old Newspaper	.50	.60	Repacked	.06	.064
No. 1 Mixed Paper	.45	.50	Miscellaneous	.04½	.044
Common Paper	.40	.50	White No. 2—		
Straw Board, Chip	.40	.45	Repacked	.03	.034
Binders' Bd. Chip	.40	.45	Miscellaneous	.0234	.024
Domestic Rags—New					
Price to Mill, f. o. b. Phila.			Repacked	1.65	1.80
Shirt Cuttings—			Miscellaneous	1.40	1.55
New White, No. 1	.0934	.0934	Black stockings	1.75	4.45
New White, No. 2	.05	.06	Roofing Stock—		
Silesias, No. 1	.04½	.05	No. 1	90	100
New (Unbleached)	.08½	.08¾	No. 2	80	90
Washables	.03	.03½	No. 3	70	80
Fancy	.04½	.05	No. 4	70	80
Cottons according to size			No. 5A	nominal	nominal
Blue Overall	.04	.04½			
New Blue	.03	.02¾			

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper		Wood, Vat lined	47 50	@
Bonds	07	Filled News Board	37 50	@
Ledgers	09	Solid News Board	42 50	@43 00
Writings	04½	S. Manila Chip	52 50	@
Superfine	12	Pat. Cut	70 00	@75 00
Line	10			
Books, S & S	07			
Books, M. F.				
Books, coated	07			
Label				
News sheets	3 75			
News, rolls	05			
Manila—				
No. 1 Manila	\$.675			
No. 1 Fibre	8 00			
No. 1 Jute	8 50			
Kraft Wrapping	7 00			
Common Bogus	3 00			
Boards				
(Per Ton Destination)				
Chip	35 00			
News Vat lined	37 50			

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper		Sulphite bleached	90 00	@ 95 00
(Mill Prices to Jobbers f o b Mill)		Sulphate	70 00	@
Bond—				
Sulphite	11			
Light tinted	12			
Dark tinted	13½			
Ledgers (sulphite)	—			
Writing	10½			
News, f o b Mills—				
Rolls (carloads)	3 50			
Sheets (carloads)	—			
Sheets (2 tons or over)	—			
Book—				
No. 1 M. F. (carloads)	9 50			
No. 2 M. F. (carloads)	8 50			
No. 3 M. F. (carloads)	8 00			
No. 1 S. C. (carloads)	10 00			
No. 2 S. C. (carloads)	9 00			
No. 1 Coated and lithe	15 00			
No. 2 Coated and lithe	14 00			
No. 3 Coated and lithe	13 25			
Coated and lithe, colored	15 25			
Wrapping—				
Gray	4 75			
White Wrap	5 25			
No. 1 Manila	7 50			
No. 1 Manila	7 50			
Fibre	7 25			
Kraft M. F. or M. G.	8 75			
Pulp				
(F. o. b. Mill)				
Ground Wood	25 00			
Sulphite easy bleach	60 00			
ing	60 00			
Sulphite, news grade	60 00			

Old Waste Papers

(In carload lots, f o b Toronto)

Shavings—

White Env. Cut. 4.00 @ —

Soft White Book

Shavings 3.15 @ —

White Bk News 1.70 @ —

Book and Ledger

Flat Magazine and

Book Stock

(old) 1.45 @ —

Light and Crum

pled Book Stock 1.30 @ —

Ledgers and

Writings 1.80 @ —

Solid Ledgers 1.80 @ —

Manila—

New Manila Cut. 2.00 @ —

Printed Manilas .90 @ —

Kraft 2.25 @ —

News and Scrap—

Strictly Overseas .90 @ —

Folded News .90 @ —

No. 1 Mixed Pa-

pers .60 @ —

Domestic Rags—

Price to mills, f o b Toronto

Per lb

No. 1 White shirt

cuttings .094 @ 10

No. 2 White shirt

cuttings .054 @ .054

Fancy shirt cut-

tings .054 @ .054

No. 1 Old whites

.04 @ .02

Thives and black

Black stockings 1.75 @ 1.85

Roofing stock

No. 1 1.25 @ —

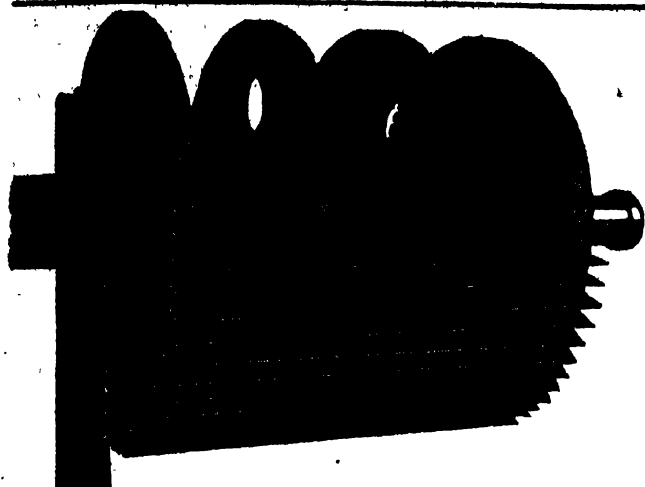
No. 2 1.15 @ —

Roofing stock

Manila rope .044 @ .044

No. 1 014 @ —

Gunny bagging 1.00 @ 1.25



Dilts Machine Works, Inc.

Fulton, N. Y., U. S. A.

Manufacturers of

**BEATING and WASHING ENGINES
FLY BARS—BED PLATES—
MACHINE KNIVES**

Our new **KEYED TYPE BANDLESS ROLL** is the final result of Many Years of Experience.

May we not tell you about its many advantages?

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Use a Lockport *Cylinder Bottom* and *Top* combination for *Board* and watch your *Felt Cost*

ASK THE MEN WHO RUN THEM
YOURS FOR SERVICE

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FOR ALL PURPOSES

ENGLISH AND AMERICAN

Perforated Metal Screens For Pulp and Paper Mills

STEEL, COPPER, BRASS, BRONZE
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punched for Centrifugal and
Rotary Screens, Pulp Washers,
Drainer Bottoms, Filter Plates, etc.



.001 Inch Round



$\frac{1}{4} \times \frac{1}{4}$ Inch Slots

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**CLAYS ROSIN SIZE
SATIN WHITE FOAM KILLER**

FELT SOAP and OTHER SPECIALTIES

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See the Second-Hand Machinery ads and note the
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BEATING ENGINES**

They seldom wear out and are never thrown out.
PERFECT CIRCULATION. NO "PADDLING."

The "EMERSON" JORDAN

does its work with half the power required by others of no greater capacity.

WRITE FOR DETAILS



WANT AND FOR SALE ADVERTISEMENTS

CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, \$1.00.

SITUATION WANTED, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 29th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED—A High Grade Master Mechanic for a Southern Pulp and Paper Mill. Address, Box 4921, care Paper Trade Journal. A-6

EXPERIENCED MEN in Paper Industry. Our confidential and personal service limited to the Pulp, Paper and Allied Trades. Can be of valuable assistance to you in locating desirable connections. Address, The Industrial Service Bureau, 1502 Monadnock Block, Chicago, Illinois. tf

MACHINE TENDERS, Rodgers Wet Machine. Married man preferred, also Digester Cooks. Address, Box 4928, care Paper Trade Journal. A-13

WANTED—Sales Agency for Pacific Coast Territory representing manufacturer of fine or Coarse Paper, Tissue, Waxed, or Paper Specialties. Distributing to Dealers or Consumers. Personal interview can be arranged immediately. Address, Box 4942, care Paper Trade Journal. A-13

SALESMAN WANTED—Familiar with Toilet Paper Market. Good salary to one who can produce results. State experience and salary expected by letter. Address, Sanguit Toilet Paper Co., New Hartford, N. Y. A-20

SALESMAN WANTED by large mill for their Eastern Office. Must be experienced in selling high grade Cardboard, Coated and Plain; also Blanks, Tag and Postcard. Must have personality and thorough acquaintance among the Eastern Paper Jobbers and Converters. Correspondence strictly confidential, state full experience and compensation expected. Address, Box 4973, care Paper Trade Journal. A-13

WANTED—Beater Engineer, 90" Fourdrinier making Book. State experience, age, etc. Mill located near New York City. Address, Box 4974 care Paper Trade Journal. A-13

PAPER SALESMAN—Experienced, for New York and vicinity for a well known house Handling Printing Papers. Salary and commission. Good proposition for the right man. Correspondence strictly confidential. Address, Box 4975, care Paper Trade Journal. A-13

SPECIALTY MILL wants superintendent with good conception of business, ability to develop ideas, and who is tactful and competent in handling help. A man familiar with cylinder and fourdrinier machines preferred. Applicant must state length of time in present position, experience fully, salary now receiving, and any other information that would be of interest to prospective employer. Address, Box 4976, care Paper Trade Journal. tf

MACHINE TENDERS WANTED—Two reliable machine tenders wanted. 90" Machine-making Book and Writing Paper. 62 Cents per hour. Apply Howard Smith Paper Mills, Cornwall, Ontario, Canada. A-6

SITUATIONS WANTED

PAPER SALESMAN in New York City who can produce a large volume of business with adequate co-operation, desires connection. Drawing account on Commission basis. Correspondence invited. Address, Box 4935, care Paper Trade Journal. tf

WANTED POSITION—As superintendent. Twenty-one years' experience; used to Specialties, Colors and Wrapping, all grades of Boards and Fibres. Knows how to handle help. Can keep up repairs. Used to Fourdrinier and Cylinder Machines. Address, Box 4786, care Paper Trade Journal. tf

SULPHATE PULP SUPERINTENDENT—With proven ability for big production at lowest costs, desires position. Would consider offer from concern where production is below the average. Address, Box 4851, care Paper Trade Journal. A-6

THE INDUSTRIAL SERVICE BUREAU is prepared to assist you with your employment problems. Confidential intermediary service for the employer and employee of the pulp, paper and allied trades. Write or wire your requirements. 1502 Monadnock Block, Chicago, Ill. tf

WANTED—Position as Day or Night Ground Wood Superintendent. United States or Canada, by young man. Married man, twelve years' experience on all grades. Now employed. References. Address, Box 4943, care Paper Trade Journal. A-13

EXPORT EXECUTIVE with 17 years' activity in Paper Business here and abroad thoroughly trained and experienced in Foreign Trade essentials, seeks managerial position with mill or exporter. Highest references. Permanent position wanted. Address, Box 4944, care Paper Trade Journal. A-6

WANTED—Position as Superintendent. Experienced on Rag and Wood Book and Bonds, Kraft and Sulphite light weight papers for twisting. Can give references. Address, Box 4945, care Paper Trade Journal. A-6

SUPERINTENDENT — Wants position, Ledger, Bonds, Writing, colored specialties, bagging. Practical. Can make your mill pay. Go anywhere. Best references. Address, Box 4888, care Paper Trade Journal. A-13

SUPERINTENDENT, now employed, desires to make change. Varied experience on all grades of box boards, container, etc. Best of references from past and present employers. Address, Box 4949, care Paper Trade Journal. A-13

PRESS PAPER, Counter and Insulating Board Maker desires position as foreman or beaterman. Capable of producing results. Address, Box 4952, care Paper Trade Journal. A-6

WANTED: WOOD PULP

To the wood pulp dealer or importer. If you are looking for efficient sales representation, this advertisement should not fail to interest you. A man, thirty-eight years of age, of recognized ability in sales circles and a splendid acquaintance with paper mill trade, is open for sales connection handling broad line all grades wood pulp. Will consider salary or commission offer that guarantees steady traveling east and west. If you have responsible pulp connections, let me hear from you. All communications strictly confidential. Address, Box 4930, care Paper Trade Journal. A-30.

SITUATIONS WANTED

WANTED POSITION — Superintendent, twenty-four years' experience making Book, Writing, Bond, Waxing and News. Knows how to handle help and build that old machine like new. Address, Box 4960, care Paper Trade Journal. A-1

SALESMAN in Chicago and Central States Territory desires good mill connection. Twelve years' successful experience selling jobbers, wholesale grocers, large printing, publishing and consuming trade. Have thorough knowledge of kraft, book papers, bag, coarse papers and boards. Can furnish best of references. Address, Box 4961, care Paper Trade Journal. A-1

PAPER AND RAG STOCK MAN wants position in Paper Mill or Conversion Plant or Grading House, as manager or superintendent. Now employed, but would like to make a change. Address, Box 4963, care Paper Trade Journal. A-6

FIFTEEN YEARS' diversified experience in the paper industry and naturally equipped with knowledge of paper such as would be an asset to your organization. Young man, 32 years of age, married, desires connection with mill or reputable jobber. Address, Box 4971, care Paper Trade Journal. A-13

EXECUTIVE with managerial ability, trained office manager, accountant and cost expert. Student of Walton School of Accountancy, Alexander Hamilton Institute and Industrial Extension Institute, specially experienced in paper mill administrative problems, financial, cost and efficiency installations, seeks position of trust and responsibility. Highest references given. Address, E. J. B. P. O. Box 760, Cincinnati, Ohio.

DOES YOUR MILL pay? If not, why not have a superintendent with proven ability and experience that will make it pay? Address, Box 4977, care Paper Trade Journal. Je-3

MAN WITH EXECUTIVE ABILITY desires position as Mill Manager. Years of experience in Paper Manufacturing. Expert in Sales, Purchasing, Cost, Accounting and Office supervision. Address, Box 4978, care Paper Trade Journal. A-20

SUPERINTENDENT open for position. Life experience, practical on cylinder, Fourdrinier, Yankee Bonds, Book, Waxing, Coating and Specialties. All grades of Boards, Straw, Fibres, Kraft. 7 years foreign experience, India and Japan. Middle aged. Will go anywhere. Address, Box 4979, care Paper Trade Journal. A-13

TOILET AND TOWEL MFGRS. ATTENTION—Philadelphia distributors with established trade desire connection with manufacturer of inter-leaved, oval or other special toilet paper and towel devices. Can carry stock and get results with suitable product. Address, Box 4980, care Paper Trade Journal. A-6

EXPERIENCED MECHANICAL ENGINEER seeks new connection Paper or Pulp mill. Capable and with record of maintenance at low cost. Familiar with foreign Mills operations. Best references. Address, Box 4981, care Paper Trade Journal. A-13

IMPORTANT OFFER—Gentleman who has a valuable personal connections with a number of European Paper and Specialty Mills (including control of several new machines making high grade light weight papers) and who already has an established trade in some of the lines made by these mills, seeks an opportunity to join young and progressive organization of high standing with a view of more efficient exploitation of these very profitable connections. Remuneration wanted commensurate only with results obtainable. Address, Box 4982, care Paper Trade Journal. A-6

SITUATIONS WANTED

YOUNG LADY, ORDER CLERK—Experienced on stock records and inventory. Good knowledge of purchasing; acquainted with mills. desires connection with mill agency or Wholesale House. Best references. Address, Box 4986, care Paper Trade Journal. A-6

POSITION WANTED by practical paper maker as superintendent, or will accept position as night boss in box board mill where production, quality and economy is required. Address, Box 4984, care Paper Trade Journal. A-20

WANTED POSITION—Was Plant Manager in News mill. Experienced in both manufacturing and accounting departments. Experience includes operation of Pulp and Paper Mill and general maintenance of plant. Address, Box 4985, care Paper Trade Journal. A-13

WOOD PULP SALESMAN seeks connection with wood pulp importer or domestic mill. Eight years' experience, large acquaintance with paper mills, familiar with imported and domestic brands. Salary secondary to opportunity to prove ability. Address, Box 4988, care Paper Trade Journal. A-6

SALESMAN with following among wholesale stationers and paper jobbers in New York City and Jersey City, desires permanent connection with reliable concern. Address, Box, 4987, care Paper Trade Journal. A-6

SUPERINTENDENT - MANAGER Wants position. Twenty years' experience on all grades paper. Expert on colors. Fourdrinier and cylinder machines. Best references. Address, Box 4988, care Paper Trade Journal. MA-18

COST ACCOUNTANT desires change. Fifteen years' practical experience steel and paper industries. Efficient office manager. Age 33. Married. Best reference. For further details Address Box 4991, care Paper Trade Journal. A-6

SUPERINTENDENT, General Foreman, or responsible office position, Envelope and Specialty Manufacturing, 13 years' practical experience, all branches. Familiar with costs and up-keep. Married, 38 years of age. Would like position. A-1 reference. Address, Box 4990, care Paper Trade Journal. A-6

FOR SALE

FOR SALE: DRYERS—8-60"x120" Dryers with bearings. A bargain. W. V. Sullivan, Call Bldg., San Francisco. tf

STANDING PULPWOOD FOR SALE—I have a fine lot of standing spruce, Balsam and Hemlock Pulp amounting from 40,000 to 50,000 cords well located in New York State. Will sell the whole or half interest and join in the operation. All communications will be treated as confidential. Address, Box 4987, care Paper Trade Journal. A-6

ENVELOPE MACHINE—Excellent operating condition. Sacrifice. Mr. Dudley, McCall Co., 236 West 37th St., New York City. A-6

PRESSES (printing). Cottrell Rotary. Two No. 7 double colors. Six No. 7 single colors. Excellent operating condition. Sacrifice. Mr. Dudley, McCall Co., 236 West 37th St., New York City. A-6

FOR SALE—Paper machine reel 110" face. Heavy pattern revolving reel for 4 drums. Marinette & Menominee Paper Co., Marinette, Wisconsin. tf

FOR SALE—Roofing and Saturating Machines, 72"x36" wide. Chilled steel rolls. Also Painter Mixing Machine, Grinders, etc. Address Box 4910, care Paper Trade Journal. tf

FOR SALE

FOR SALE—14 Calendar Rolls, 58" face, 3' 14" diameter. 2 No. 1 Claflin Engines. 1 small Jordan Engine. 1 6" Horizontal Water Pump. 2 Air Fans. Complete triple-deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

COAL—Mohannon and "E Seam" bituminous coals, low sulphur, low ash. Lowest freight rate east and north. Prices and freight rates will be furnished on request. Halden-Kelley Coal Company, 309 Market St., Clearfield, Pa. tf

FOR SALE—Calendar roll grinder, second hand Farrel Machine. Grinds roll 34" diameter by 126" face. Fairly good condition. Address, Box 4932, care Paper Trade Journal. A-6

FOR SALE—One New York Safety 5" x 8" vertical steam engine, 32" x 4 1/2" fly wheel, Pickering Governor. One Bank of 28" diameter, 80" face, set in two tiers, complete with top and bottom felt stretcher guides and carrying rolls in first class condition, with steam headers. Now in use. One two drum reel for 44" machine complete, now in use. One 10 plate, Harmon screen, complete with plates, driving pulley and three extra sets of plates. One rope mullen screen, 10 plates, 12" x 42". One 36" Holyoke Machine plate. One 6" x 16" Holyoke Machine, horizontal, single plunger, belt driven, water pump. Address, Box 4989, care Paper Trade Journal. A-20

FOR SALE—One Stack Calendar, 62" face, 7 rolls, one 18", one 14" and five 12". Steel, bored, Pusey & Jones steam joints. Warren doctor, strictly modern. Made by Farrel Foundry and Machine Co. Used very little. Address, Strathmore Paper Co., Miltenague, Mass. A-6

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Will consider sale outright or capital from responsible and experienced man. Address, Box 4955, care Paper Trade Journal. tf

MISCELLANEOUS

WANTED—8 plate open Packer Screen with or without plates. State lowest cash price. Mill Department, Rose Lithographic Corporation, 55-33rd Street, Brooklyn, New York. A-27

WANTED—A single Drum Winder suitable for Winding Tissue, about 72 inch face. Address, Box 4948, care Paper Trade Journal. A-13

Classified Advertising
BRINGS
RESULTS

MISCELLANEOUS

PULP WANTED—Will pay cash for any quantity Foreign Pulp on spot and to arrive. Send particulars with price. Address, Box 4932, care Paper Trade Journal. tf

SWIFT, GEORGE W., JR., Designer and Manufacturer of Special Machinery for Manufacturing and Printing Paper Goods, Bordentown, N. J. 1-1-34

Treasury Department,
Office of the Secretary,
Washington, D. C., March 30, 1922.
Sealed proposals will be received at this office until 11 o'clock A. M. Thursday, May 4, 1922, from manufacturers of bond, bank-note and other fine papers for furnishing bank-note paper of the highest quality containing the distinctive feature now in use by the Department, for the printing of United States currency and other securities, national and Federal reserve bank notes, Federal reserve notes, etc., for the fiscal year beginning July 1, 1922. Blank forms for submitting proposals, with specifications and further information, will be furnished manufacturers who intend to bid upon application to this office where samples of the paper required may be examined.
A. W. MELLON,
Secretary of the Treasury.

Treasury Department,
Bureau of Engraving and Printing,
Washington, D. C., April 3, 1922.
Sealed proposals are invited to furnish this Bureau with Postage Stamp Paper and Internal Revenue Paper, Brass and Iron Castings, Cleaning of Windows, Purchase of Pulp, Ink Scrapings, Distinctive Paper Shredded Trimmings and Postage Stamp and Internal Revenue Paper Trimmings, during the fiscal year beginning July 1, 1922. Proposals to be received not later than 2 P. M., Monday, May 15, 1922. Blank forms with specifications for proposals for the several schedules and further information will be furnished on application to
LOUIS A. HILL,
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DRYERS—Four 48"x111", thirteen 36"x95", four 48"x68", one 84"x57", eleven 43"x56".
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SLITTERS AND WINDERS—One 120" Warren, one 108", 36" Kidders.
REELS—Pusey & Jones two drum upright 48" to 114".
BEATERS—Five 72"x42" Noble & Wood, one 66"x42" Noble & Wood, equipped with three cylinder washers; one Dilts 62"x50" iron tub, one Jones 62"x52", seven Horne 36"x36". Two No. 2 Claflins, two No. 1 Claflins.
JORDANS—One Wagg Majestic, three No. 2 Dillon Improved, one Large Horne, four Monarch, one Jones Standard, two Pope Brushing engines.
SCREENS—Six 10 plate open side Packer, two 6 plate, one Moore & White auxiliary.
STUFF PUMPS—Deane triplex, 9"x8", Gould triplex 8"x10", Sandusky triplex 4"x8".
REVOLVING SHEET CUTTERS—One 104" Horne, five 61" Hamblet, four 61" Finlay, one 50" Hamblet diagonal, one 42" Finlay.
WET MACHINES—Four 72" Bagley & Squal Hydraulic.
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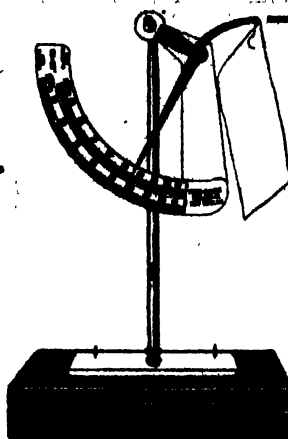
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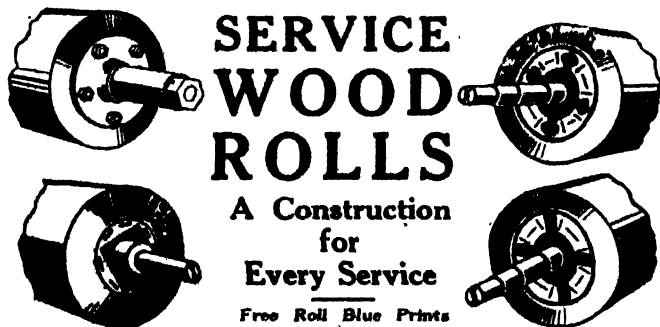
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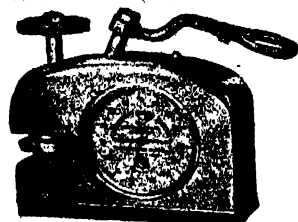
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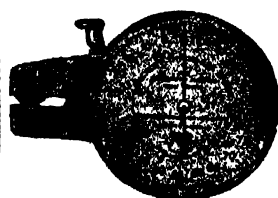
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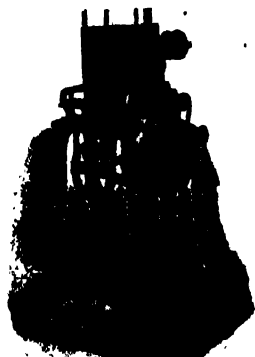
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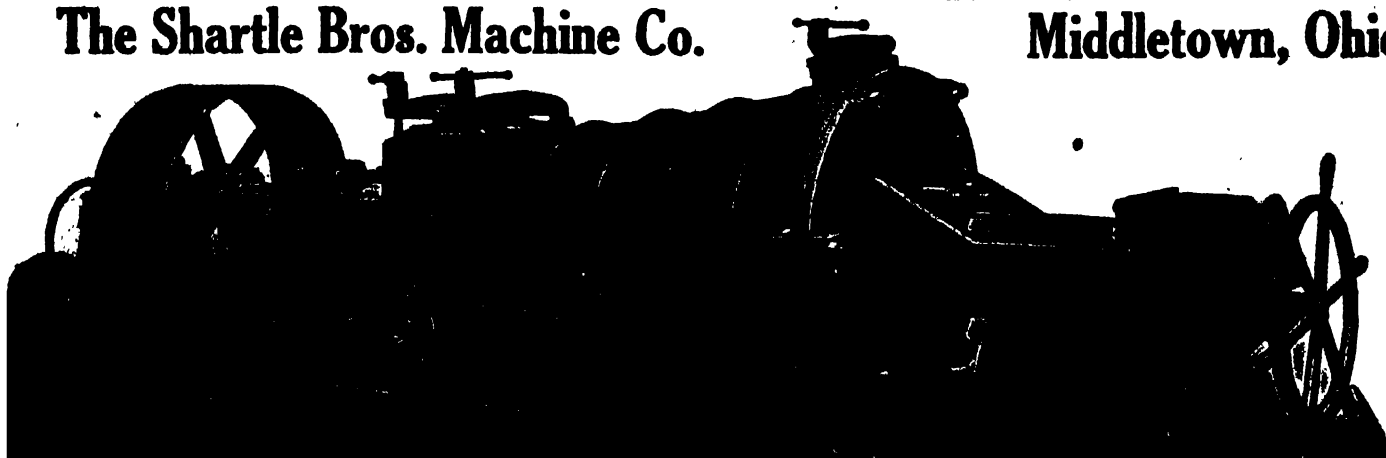
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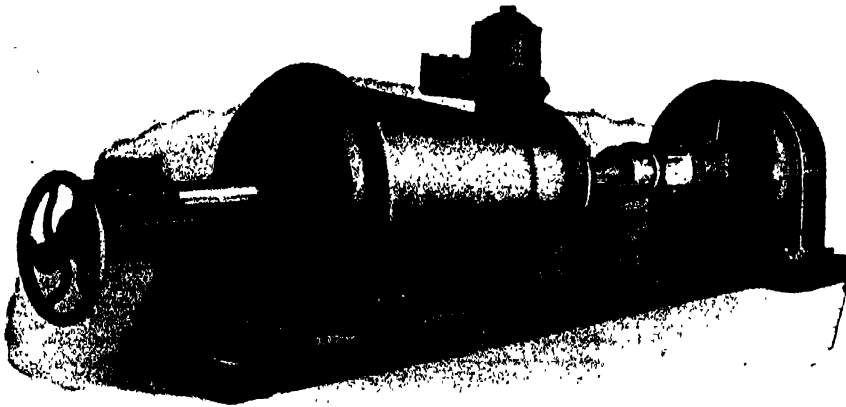
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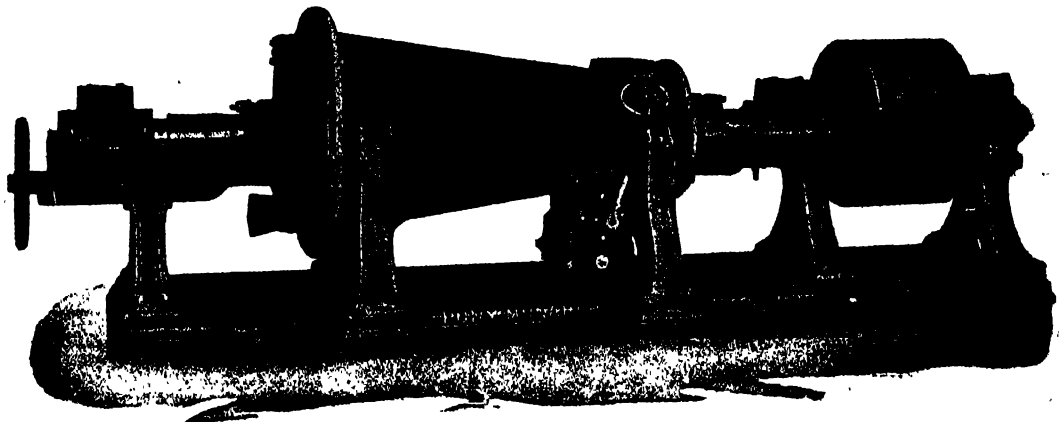
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CLASSIFIED INDEX TO ADVERTISEMENTS

	Page		Page		Page
ADDING MACHINE ROLLS.		CLAY.		FLOOR COVERINGS.	
Paper Manufacturers Co.	70	Atterbury Bros.	Front Cover	L. Sonneborn & Sons.	67
AGALITE.		John W. Higman Co.	63	FLOOR HARDENER (Concrete).	
Union Talc Co.	69	Paper Makers Chemical Co.	63	L. Sonneborn & Sons.	67
U. S. Talc Co.	70	Star Clay Company	76	FOURDRINIER WIRES.	
ALUM.		Western Paper Makers Chemical Co.	63	Appleton Wire Works.	76
The Kalbfleisch Corp.	7	CLUTCHES (Friction, Etc.).		Buchanan Bolt & Wire Co.	72
Pennsylvania Salt Mfg. Co.	76	Hill Clutch Co.	—	Cable Excelsior Wire Mfg. Co.	76
Superior Chemical Co.	3	COGS.		Cheney, Bigelow Wire Works.	74
Winkler Bros., Inc.	75	N. P. Bowsher Co.	76	Eastwood Wire Mfg. Co.	76
ARCHITECTS AND ENGINEERS.		Menasha Wood Split Pulley Co.	—	Green Bay Wire Works.	69
George F. Drew	68	COMPRESSORS (Air).		Lindsay Wire Weaving Co.	75
Hardy S. Ferguson	68	The Nash Engineering Co.	31	Joseph O'Neill Wire Works.	75
William T. Field	68	CONVEYORS (Pulpwood).		The W. S. Tyler Company.	75
George F. Hardy	68	Jeffrey Mfg. Co.	—	FURNACES (Automatic).	
Management Engineering and Development Co.	69	CORRAGE.		Murphy Iron Works.	68
F. L. Smith	68	Columbian Rope Co.	—	GAUGES (Caliper).	
Stebbins Engineering Co.	69	CUTTERS.		Farrel Foundry & Machine Co.	25
Thomas L. Tomlins & Son.	68	Smith & Winchester Mfg. Co.	8	GAUGES (Pressure, Indicating and Recording).	
Vitale & Rothery	68	DIE CUTTERS.		Bristol Co., The	—
Joseph H. Wallace & Co.	68	Hoggson & Pettis Mfg. Co.	2	GUMMING AND GLUING MACHINERY.	
ASBESTINE PULP.		Independent Die Co., Inc.	—	Potdevin Machine Co.	53
International Pulp Co.	Front Cover	DIGESTERS.		IRON EXTRACTORS.	
ASH-HANDLING MACHINERY.		American Welding Co.	55	Oakes Co., Roland T.	—
Jeffrey Mfg. Co.	—	DRINKING CUPS.		IRON PIPE.	
BALL BEARINGS.		F. N. Butt Company, Ltd.	54	Reading Iron Co.	9
S. K. Industries, Inc.	—	DRIVES (Gear).		KNIVES, ETC.	
BARKERS.		Farrel Foundry & Machine Co.	25	Bolton & Son, J. W.	9
Valley Iron Works	21	DRIVES (Silent Chain).		Machinery Co., of America	9
BEARINGS (Collar Oiling).		Morse Chain Co.	68	LUBRICANTS.	
Hill Clutch Co.	—	DRYER EXHAUSTS.		Vacuum Oil Co.	—
SEATER PADDLES.		The Nash Engineering Co.	31	MICROMETERS.	
Menasha Wood Split Pulley Co.	—	DRYING SYSTEMS.		Ashcroft Mfg. Co.	66
BEATING ENGINES.		Open Coil Heater & Purifier Co.	—	F. J. Cady Co.	—
Appleton Machine Co.	53	W. F. Pickles	—	Foreign Paper Mills, Inc.	3
Beloit Iron Works	14	Ross Engineering Co., J. O.	68	MICROMETER CALIPERS.	
Clafin Engineering Co.	61	DYES, ANILINE.		Lobdell Car Wheel Co.	57
Dayton Beater & Hout Co.	71	Calco Chemical Co.	—	MILL COGS.	
Dillon Machine Company, Inc.	63	Heller & Merz	13	N. P. Bowsher & Co.	76
Ditta Machine Works, Inc.	74	Mathieson Alkali Works	27	MILL INSTALLATIONS.	
Downington Mfg. Co.	74	National Aniline & Chemical Co.	—	The Iavne Ohio Co.	23
Emerson Mfg. Co.	63	The White Tar Aniline Corporation.	4	MOTORS.	
Noble & Wood Machine Co.	71	DYE STUFFS.		B. F. Perkins & Son, Inc.	11
Valley Iron Works	21	E. I. Du Pont de Nemours & Co.	—	MOTOR TRUCKS.	
BELTING.		ELECTRIC HOISTS.		Packard Co.	—
Goodyear Tire & Rubber Co.	—	Shepherd Electric Crane & Hoist Co.	—	OILS AND GREASE.	
R. D. Skinner & Co., Inc.	—	ENVELOPE MACHINES.		Vacuum Oil Co.	—
BOILERS.		Potdevin Machine Co.	53	PACKING.	
Heina Boiler Co.	66	F. L. Smith Machine Co.	—	Jenkins Bros.	57
BRONZE CASTINGS.		EVAPORATORS.		PAINTS AND VARNISHES.	
Hyde Windlass Co.	13	Zarembo Company	—	Du Pont de Nemours Co., E. I.	—
BUCKETS (Elevators).		FAN PUMPS.		PAPER BAG MACHINERY.	
Hendrick Mfg. Co.	10	Valley Iron Works	21	Potdevin Machine Co.	53
CALENDER ROLLS.		FELTS AND JACKETS.		Smith & Winchester Mfg. Co.	8
Farrel Foundry & Machine Co.	25	Albany Felt Co.	—	PAPER BAG MANUFACTURERS.	
Lobdell Car Wheel Co.	57	Appleton Woolen Mills	8	Hudson Bag Company	61
Norwood Engineering Co.	67	Draper Bros. Co.	67	Lawrence Bag Co.	54
B. F. Perkins & Son, Inc.	11	Fitchburg Duck Mills	11	Schorach & Co.	61
Textile Finishing Machinery Co.	—	F. C. Huyck & Son	53	PAPER BOX BOARDS.	
CARBON TOOLS.		Knox Woolen Mills	53	C. L. La Boiteaux Co.	5
Thomas L. Dickinson	70	Lockport Felt Co.	63	PAPER CUTTERS.	
CASEIN.		Orr Felt & Blanket Co.	55	Hamblet Machine Co.	2
Casoin Mfg. Co.	3	Shuler, Benninghofen Co.	—	PAPER DEALERS.	
CENTRIFUGAL PUMPS.		Waterbury Felt Co.	4	Fernstrom Paper Co.	61
Valley Iron Works	21	Waterbury & Sons Co., H.	69	R. F. Hammond	Front Cover
CHAINS.		FELT ROLLS.		Midwest Paper Co.	70
Jeffrey Mfg. Co.	—	Rodney Hunt Machine Co.	66	PAPER EXPORTERS.	
CHEMICALS, COLORS, ETC.		FILTERING SYSTEMS.		Hudson Trading Co.	2
Arnold, Hoffman & Co., Inc.	—	Norwood Engineering Co.	67	Parsons Trading Co.	Front Cover
Du Pont de Nemours Co.	13			Fred C. Strype ..	35
Heller & Merz Co.	66				
Kuttruff, Pickhardt & Co.	27				
Mathieson Alkali Works	4				
The White Tar Aniline Corporation.	76				
C. K. Williams & Co.	76				

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CLASSIFIED INDEX TO ADVERTISEMENTS

PAPER MANUFACTURERS.		Page	PRESS ROLLS.		Page	SUCTION BOX COVERS.		Page
Bayless Mfg. Co.	4		Rodney Hunt Machine Co.	66		Menasha Wood Split Pulley Co.	66	
Becker Paper Corporation	5		PLUGS.			SULPHITE, BLEACHED AND UNBLEACHED.		
Brown Company	6		Menasha Wood Split Pulley Co.	—		J. Andersen & Co.	4	
Collins Mfg. Co.	6		PLUGS (Wood).			The Borggaard Co., Inc.	5	
Diamond State Fibre Co.	Front Cover		O. L. Bartlett	—		Butterworth & Co., Inc.	69	
Eastern Mfg. Co.	71		PULP PROCESS.			Canadian Robert Dollar Co.	33	
Eaton-Dikeman Co.	12		Castle, Gotthel & Overton	8		Craig-Becker Co., Inc.	35	
Fort Howard Paper Co.	5		PULP STONES.			Eastern Manufacturing Co.	71	
Franklin Paper Co.	—		International Pulp Stone Co.	Front Cover		Mead Sales Co., The	—	
Hammermill Paper Co.	6		Lombard & Co.	66		Parsons Pulp and Lumber Co.	12	
Hanna Paper Corporation	55		PUMPS.			Price & Pierce, Ltd.	Front Cover	
Howard Paper Co.	3		Frederick Iron & Steel Co.	7		Pulp & Paper Trading Co.	4	
Missisquoi Pulp & Paper Co.	12		Hayden Pump & Blower Co.	—		SULPHUR.		
Mountain Mill Paper Co.	—		The Layne Ohio Company	23		Texas Gulf Sulphur Co.	6	
Poland Paper Co.	6		PUMPS (Vacuum).			Union Sulphur Co.	3	
St. Regis Paper Co.	70		The Nash Engineering Co.	31		TANKS (Water, Oil, etc.).		
Sherman Paper Co.	69		PRESSURE BULKERS.			W. F. Caldwell Co.	7	
Stratford Paper Co.	35		B. F. Perkins & Son, Inc.	11		New England Tank & Tower Co.	75	
Wausau Sulphate Fibre Co.	5		RAG CUTTERS.			Stearns Lumber Co., A. T.	2	
West Virginia Pulp & Paper Co.	—		B. F. Perkins & Son, Inc.	11		Tokheim Oil Tank & Pump Co.	—	
PAPER AND PULP MACHINERY.			Laylor-Stiles & Co.	—		G. Woolford Wood Tank Co.	—	
Appleton Machine Co.	53		REAM CUTTERS.			TIMBER ESTIMATES.		
Bagley & Sewell Co.	74		Geo. T. McLaughlin Co.	—		R. R. Bradley	68	
Baker Mfg. Co.	14		RECORDING INSTRUMENTS.			P. T. Coolidge	68	
Beloit Iron Works	29		Bristol Co.	—		James W. Sewall	68	
Bird Machine Co.	—		REGISTERS.			TRANSMISSION MACHINERY.		
Black-Clawson Co.	11		Standard Register Co.	—		H. W. Caldwell Co.	—	
Clark-Aiken Co.	65		ROLL GRINDERS.			Hill Clutch Co.	—	
Frank H. Davis	74		Fairrel Foundry & Machine Co.	25		Reeves Pulley Co.	—	
Downington Mfg. Co.	25		Loddell Car Wheel Co.	57		TURBINES.		
Farrel Foundry & Machine Co.	31		ROSIN.			S. Morgan Smith Co.	—	
Gleason Machine Works	33		Hercules Powder Co.	54		TURPENTINE.		
Improved Paper Machinery	10		ROSIN SIZE.			Hercules Powder Co.	54	
Sandy Hill Iron & Brass Co.	67		Aralcol Mfg. Co.	75		TWINES.		
Shurtle Bros. Machine Co.	8		Paper Makers Chemical Co.	63		American Manufacturing Co.	4	
Smith & Winchester Mfg. Co.	—		Western Paper Makers Chemical Co.	63		National Patent Reed Sales Co.	—	
Trimbley Machine Works	21		ROTARY BLEACHING BOILERS.			VALVES.		
Waterville Iron Works	—		Biggs Boiler Works Co.	—		Crane Co.	76	
PAPER MILL AGENTS.			SAVEALLS.			Jenkins Bros.	37	
Dillon & Barnes	70		Bird Machine Co.	29		VAPOR ABSORPTION SYSTEMS.		
McIver, Dana T.	2		SATIN WHITE.			Ross Engineering Co., J. O.	68	
Meiby, E. C.	3		Kalbfleisch Corporation	40		VENTILATING FANS.		
PAPER AND PULP MILL BROKERS.			Paper Makers Chemical Co.	63		B. F. Perkins & Son, Inc.	11	
Gibbs-Brower Co.	67		Western Paper Makers Chemical Co.	63		Ross Engineering Co.	68	
PAPER SPECIALIST.			SCALES (Paper).			VEGETABLE PARCHMENT PAPERS.		
Charles W. Bell	—		Fred Baker	66		Kalamazoo Vegetable Parchment Co.	35	
PAPER STOCK.			E. J. Cady & Co.	3		WATER FILTERS.		
Atterbury Bros.	Front Cover		Foreign Paper Mills, Inc.	—		Hungerford & Terry, Inc.	66	
Butterworth & Co., Inc., F.	69		SCREENS.			WATER SUPPLIES.		
Castle, Gotthel & Overton	75		Beloit Iron Works	11		The Layne-Ohio Company	23	
Gumbinsky Bros.	76		Bird Machine Co.	29		WAXED PAPERS.		
Hicks, Daniel M.	69		Central Mfg. Co.	—		Dragon Paper Mfg. Co.	7	
Mendelson Bros. Paper Stock Co.	69		Wm. A. Hardy & Sons Co.	55		WOOD FLOUR.		
Penn Paper & Stock Co.	69		Union Screen Plate Co.	73		Union Wood Flour Co.	69	
Salomon Bros. & Co.	69		SHREDDERS (Pulp and Paper).			WOOD PULP IMPORTERS.		
Train-Smith Co.	Front Cover		Valley Iron Works	21		American Wood Pulp Corp.	4	
PAPER TESTERS.			SKYLIGHTS.			J. Andersen & Co.	4	
Ashcroft Mfg. Co.	66		E. Van Noorden & Co.	75		Ira L. Beebe & Co.	12	
Foreign Paper Mills, Inc.	3		SLASHERS.			The Borggaard Co., Inc.	—	
B. F. Perkins & Son, Inc.	11		Ryther & Pringle Co.	—		M. Gottesman & Co.	—	
Thwing Instrument Co.	57		SLITTERS AND REWINDERS.			Hammond, R. F.	Front Cover	
Valley Iron Works	71		Beloit Iron Works	14		F. J. Keller Company	12	
PAPER TUBE MACHINERY.			C. Benninghofen & Son	68		Lagerloef Trading Co.	12	
Dietz Machine Works	10		Cameron Machine Works	70		Mead Sales Co., The	—	
Griesinger Machine Works	66		Dietz Machine Works	77		Nilsen, Lyon & Co., Inc.	37	
PAPER WAXING MACHINERY.			Samuel M. Langston Co.	70		V. J. Pagel & Co., Inc.	19	
Farrel Foundry & Machine Co.	25		STARCH.			J. F. Patton & Co., Inc.	57	
Potdevin Machine Co.	53		Corn Products Refining Company	6		Perkins-Goodwin Co.	37	
PERFORATING MACHINES.			STEAM SPECIALTIES.			Scandinavian American Trading Company	Front Cover	
Dietz Machine Works	10		Crane Co.	76		WOOD ROLLS.		
PERFORATING METAL.			Open Coil Heater & Purifier Co.	—		Rodney Hunt Machine Co.	66	
Harrington & King Perforating Co.	61		STITCHING MACHINERY.					
Hendrick Mfg. Co.	10		Saranac Machine Co.	—				
Charles Mundt & Sons	63		STOCK REGULATORS.					
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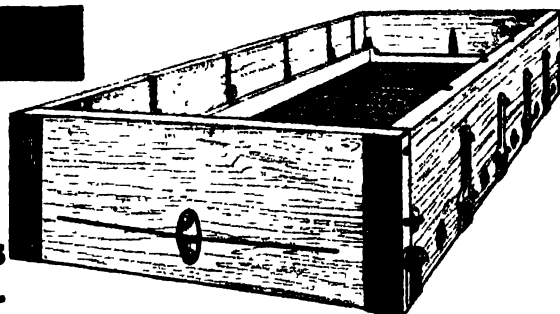
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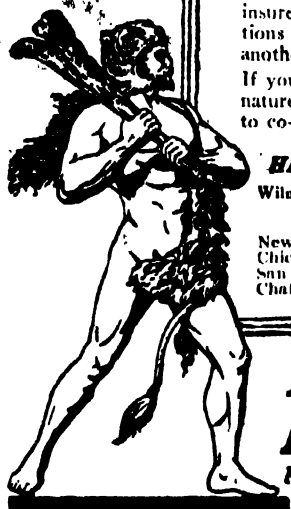
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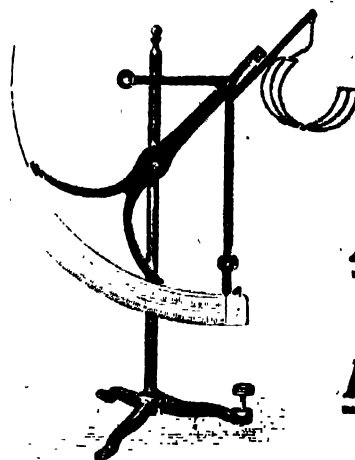
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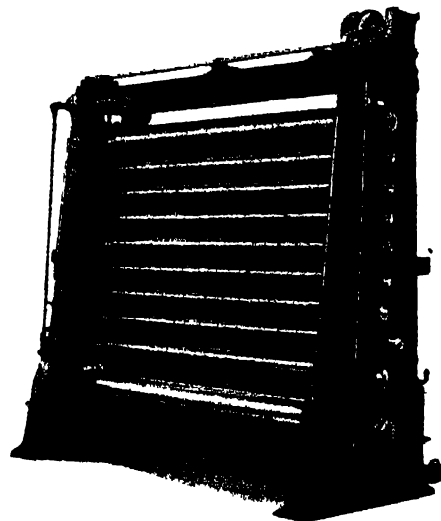
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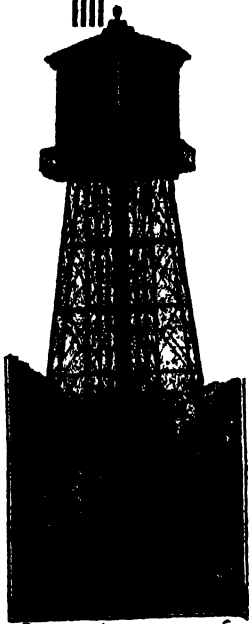
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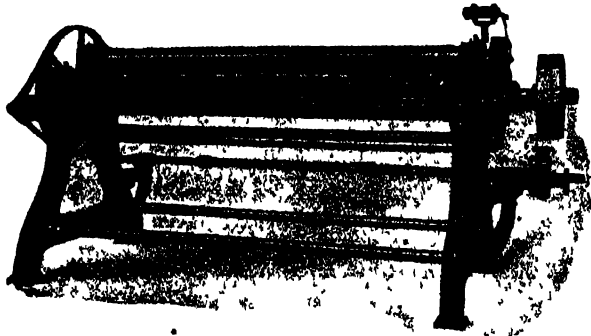
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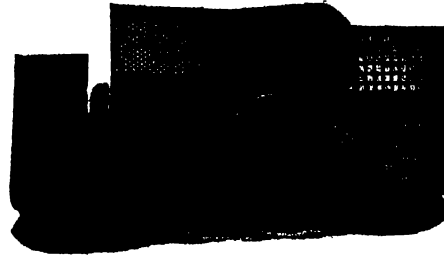
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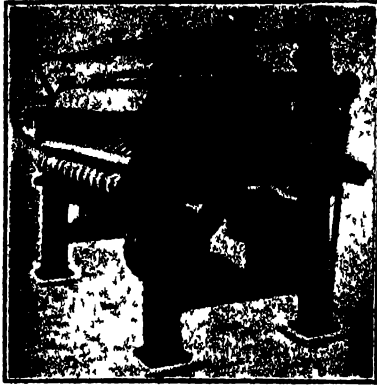
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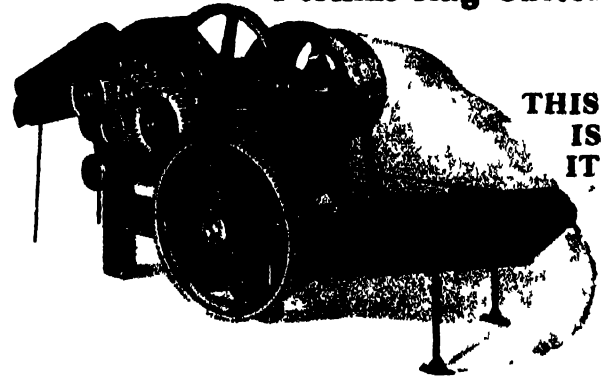


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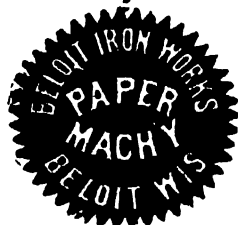
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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTIETH YEAR

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Table of Contents

News of the Trade:

	PAGE
Production of all Paper for April	16
Howard Paper Co. Makes Improvements	17
Atlas Paper Co. Formed at San Francisco	17
Summer Quiet Comes to Philadelphia	18
Paper Trade Assn. Elects	18
Kalamazoo Ready for Meeting	20
New York and New England Salesmen to Meet	20
Protest Against Swedish Kraft	20
Boston Merchants Hustle for Business	22
Maine Superintendents Hold Successful Meeting	24
Canadian Industry Sound Financially	30
Canada's Pulp and Paper Exports	30
New York Trade Jottings	34
Bagley & Sewell May Make Screens	34
Oppose Duty on Casein	34
Hammond Paper & Bag Co. Formed	34
Paper Men Show Lines at Candy Exhibit	34
Program for Cost Assn. Convention	36
Price of Brass Fourdrinier Wires	36
Conditions in Chicago Improve	36
Charleston Paper Co. Buys Nitro Plant	41
Paper Mill Employment and Wages	41
Spanish River Mills To Use Hydro Plane	41
Kimberly-Clark Co. Orders Textbooks	41
Production of News Print for April	56
News Print Production Loss	56
Publishers' Tonnage of News Print	56
Jobbers' Tonnage of News Print	56
Recent Incorporations	58
Bids and Awards for Government Paper	58
Imports and Exports of Paper and Paper Stock	64

Editorial:

	PAGE
The Need for Enterprise	49
Foreign Trade Recommendations	40

Technical Section:

Waste in the Pulp and Paper Industry	43
Use of Continuous Centrifugal in Soda Pulp Mill	44
Computing the Pulp Furnish	45
A Dictionary of Paper Terms	46
Current Paper Trade Literature	50
Beet Pulp as a Substitute for Wood Pulp	50
Handling Liquid Chlorine	51
Coating Paper with Metals or Mica	52
Volume of Air Required in Air Drying	53
Improving Performance of Steam Boilers	54
Methods of Furnishing Stock	55

General Section:

Better Paper for Money and Bonds	54
China to Operate Mill on Government Basis	54
Join Paper Men in Opposing Casein Tariff	55

Obituary:

George F. Hewitt	32
J. Howard Welch	32

Market Review:

New York Market Review	62
Market Quotations	63
Miscellaneous Markets	66

PRODUCTIONS OF ALL PAPERS DURING THE MONTH OF APRIL

According to Statistics Just Furnished by the Federal Trade Commission, Stocks of All Grades Except Wrapping, Fine and Hanging, Increased During the Month—Mill Stocks of News Print at the End of the Month Equaled Six Days' Average Output, of Book Paper Equaled Thirteen Days' Average Output and of Paper Board Eleven Days' Average Output.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 1, 1922.—The attached tabulation is a summary of production, shipments, and stocks of paper mills in the United States as reported to the Federal Trade Commission for the month of April, 1922. This summary is compared with the month of April, 1918 to 1921, inclusive.

The average production for all grades, except Boxboard, is based upon the production for the years 1917 to 1921, inclusive, and the average stocks are based upon the stocks carried for the years 1918 to 1921, inclusive.

Figures for Boxboard prior to March, 1920, were included in Paperboard. The average production and stocks for Boxboard are based upon the figures tabulated during the period March, 1920, to December 31, 1921.

The production has been classified for convenience into 12 grades, according to the grades of paper manufactured by the reporting mills. Some mills making several grades appear in more than one group which causes duplication in the body of the tonnage tables in the number of mills.

For each grade the number of mills includes all mills commonly operating on that grade, regardless of whether they produced any tonnage of that particular grade during the month. In other words, it includes all mills reporting either production or merely stocks or shipments of that grade.

The stocks of paper carried by different mills depend not only upon the condition of the market but also upon the kind of paper made, trade customs, etc.

Tonnage Summary

Production, Shipments and Stocks of Paper, by Grades, for the month of April, 1922, compared with April, 1921, 1920, 1919 and 1918, together with average production and stocks.

Grade	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
News Print (Standard and Special Grade of News)					
April, 1922.....	79	28,180	111,861	115,167	24,874
April, 1921.....	88	41,789	115,408	122,091	35,106
April, 1920.....	89	27,564	128,269	134,160	21,673
April, 1919.....	70	31,932	116,278	111,825	36,385
April, 1918.....	66	26,984	111,480	113,600	24,864
Average.....	...	...	110,000	...	25,307
Standard News					
April, 1922.....	65	23,298	105,079	108,276	20,101
April, 1921.....	67	35,517	105,855	111,793	29,580
April, 1920.....	75	25,104	118,917	124,936	19,085
April, 1919.....	51	24,869	107,445	101,078	31,236
April, 1918.....	50	20,699	101,497	103,305	18,891
Average.....	...	...	99,700	...	20,900
Book (M. F. S. S. C. and Coated):					
April, 1922.....	91	38,367	70,507	71,507	37,367
April, 1921.....	92	37,721	51,380	50,846	38,255
April, 1920.....	95	24,496	95,251	92,746	27,001
April, 1919.....	88	32,823	67,628	65,306	35,145
April, 1918.....	90	27,654	76,702	75,505	28,851
Average.....	...	...	73,325	...	30,305

Grade	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
Paperboard—Total (Straw Fiber, Leather, Chip, etc.):					
April, 1922.....	239	71,986	164,327	166,557	69,756
April, 1921.....	256	67,394	128,186	124,800	70,780
April, 1920.....	242	67,441	199,395	191,898	46,938
April, 1919.....	234	60,387	138,802	136,927	62,262
April, 1918.....	227	35,312	162,836	159,754	38,394
Average.....	...	...	157,850	...	49,989
Boxboard:					
April, 1922.....	136	33,563	121,398	122,238	32,723
April, 1921.....	135	32,305	90,637	87,709	35,233
April, 1920.....	141	17,852	148,063	144,360	21,553
Average.....	...	...	111,425	...	26,048
Wrapping (Kraft, Manila, Fiber, etc.):					
April, 1922.....	150	64,931	61,562	58,092	68,401
April, 1921.....	144	57,536	51,713	50,627	58,622
April, 1920.....	150	80,291	75,347	74,602	31,036
April, 1919.....	159	71,238	48,158	43,414	75,982
April, 1918.....	133	35,343	61,859	57,148	40,054
Average.....	...	...	59,150	...	43,482
Bags (All Kinds):					
April, 1922.....	46	3,714	17,194	17,507	3,401
April, 1921.....	39	3,792	7,954	8,314	3,432
April, 1920.....	43	2,829	19,745	18,979	3,595
April, 1919.....	40	5,109	9,435	9,552	5,552
April, 1918.....	24	2,883	14,197	15,065	2,015
Average.....	...	...	13,275	...	3,362
Fine (Writing, Bonds, Ledgers, etc.):					
April, 1922.....	103	35,123	27,420	26,737	35,806
April, 1921.....	107	39,355	15,631	14,903	40,083
April, 1920.....	116	30,211	33,493	31,486	32,218
April, 1919.....	112	37,819	22,470	22,050	38,239
April, 1918.....	88	23,527	27,823	16,689	34,661
Average.....	...	...	26,675	...	33,122
Tissue (Toilet, Crepe, Fruit Wrappers, etc.):					
April, 1922.....	97	8,634	15,486	15,591	8,529
April, 1921.....	93	8,725	9,686	10,665	7,746
April, 1920.....	101	5,997	16,572	15,730	6,839
April, 1919.....	89	8,141	10,900	9,673	9,368
April, 1918.....	72	4,400	11,830	10,235	5,995
Average.....	...	...	12,275	...	6,737
Hanging (No. 2 Blank, Oatmeal, Tile, etc.):					
April, 1922.....	25	5,321	6,809	6,807	5,323
April, 1921.....	20	9,314	3,862	3,089	10,087
April, 1920.....	23	1,281	8,550	8,660	1,171
April, 1919.....	20	3,219	7,376	6,465	4,080
April, 1918.....	15	4,925	4,358	3,459	5,824
Average.....	...	...	6,950	...	4,693
Felts and Building (Roofing, Sheathing, etc.):					
April, 1922.....	47	12,337	28,986	29,739	11,584
April, 1921.....	51	11,629	22,131	24,091	9,669
April, 1920.....	54	7,604	33,587	31,220	9,971
April, 1919.....	45	7,828	17,841	17,934	7,738
April, 1918.....	34	7,902	26,407	29,728	4,581
Average.....	...	...	25,025	...	8,853
Other Grades (Specialties not Otherwise Classified):					
April, 1922.....	107	20,930	24,309	25,418	19,821
April, 1921.....	95	20,082	16,061	16,158	19,985
April, 1920.....	86	15,030	24,193	23,432	15,791
April, 1919.....	64	13,169	13,048	12,974	13,243
April, 1918.....	61	8,395	22,648	24,515	6,528
Average.....	...	...	19,650	...	14,466
Total—all grades:					
April, 1922.....	...	289,523	528,461	533,122	284,862
April, 1921.....	...	297,337	422,012	425,584	293,765
April, 1920.....	...	184,744	634,402	622,913	196,233
April, 1919.....	...	271,865	451,889	435,760	287,994
April, 1918.....	...	177,325	520,140	505,698	191,767
Average.....	...	...	504,175	...	220,386

The following stocks were reported on hand at terminal and delivery points on April 30, in addition to the mill stocks shown in the tabulation: News print, 348 tons; book paper, 3,155 tons; fine 186 tons; paper board, 100 tons; wrapping, 40 tons; and "other grades," 247 tons.

Stocks of all grades, except wrapping, fine, and hanging decreased during the month. Stocks of all grades reported by manufacturers at the end of April amounted to 288,938 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported news print stock and tonnage in transit aggregating 187,553 tons.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic mills on April 30, with their average daily production, based upon the combined production for 1918 to 1921, inclusive, the figures show that:

News print paper mill stocks equal 6 days' average output.
 Book paper mill stocks equal 13 days' average output.
 Paper board mill stocks equal 11 days' average output.
 Wrapping paper mill stocks equal 29 days' average output.
 Bag paper mill stocks equal 6 days' average output.
 Fine paper mill stocks equal 34 days' average output.
 Tissue paper mill stocks equal 17 days' average output.
 Hanging paper mill stocks equal 19 days' average output.
 Felts and building paper mill stocks equal 12 days' average output.
 Miscellaneous paper mill stocks equal 25 days' average output.
 Total paper mill stocks of all grades equal about 14 days' average output.

Imports and Exports

The imports and exports of all grades of paper for March, 1922, compared with March, 1921, as shown by the records of the Department of Commerce were as follows:

	March, 1922		March, 1921	
	Pounds	Value	Pounds	Value
Imports:				
News print.....	156,062,992	\$5,455,889	133,581,913	\$8,300,695
Book paper.....	19,600	2,267	250,721	25,812
Wrapping.....	3,834,392	139,707	496,804	37,630
Hanging.....		63,228		51,737
All other grades (a).....		280,794		338,077
Exports:				
News print.....	5,581,681	246,275	2,191,874	169,847
Book paper.....	1,726,890	185,535	4,489,628	644,289
Paper board.....		219,201		291,221
Wrapping.....	3,714,454	722,045	1,417,087	154,143
Bag.....		98,592		55,530
Fine.....		141,981		374,521
Tissue.....		109,800		79,990
Hanging.....		64,479		92,622
All other grades (a).....		354,663		490,154
Total imports.....		\$5,941,885		\$8,753,951
Total exports.....		1,642,571		2,352,333

(a) Includes some paper already converted into commercial articles.

News print is the only grade of which the United States is a heavy importer. The bulk of this tonnage is imported from Canada.

The value of the exports of News Print, for March, 1922, was about 5 per cent of the imports.

The value of the total imports of all grades was about 2 per cent less than for February.

The value of the total exports for March, 1922, was less than

the imports, by \$4,299,314 and was \$709,761 less than the exports for March, 1921.

News Print, Book, Wrapping, and Paper board were the principal grades exported, as to value.

Loss of Production

The idle machine time reported to the commission for April, 1922, is shown by grades in the attached tabulation.

The number of machines includes only those machines for which idle time was reported during the month. It does not include the machines in 28 mills that were closed down completely for the month.

The total number of machines may include duplications because the reports may count the same machine twice if idle for different reasons during different parts of the month, or if idle part of the time on one grade and part of the time on another.

The reasons tabulated for lost time are "lack of orders" and "repairs." "Other reasons" include "lack of material," "lack of water power," etc.

The time lost in April, 1921, is given by grades and reasons for purposes of comparison.

Howard Paper Co. Make Improvements

URBANA, Ohio, May 29, 1922. The Howard Paper Company has just completed extensive improvements at its Urbana mills, at the same time installing new screens, savealls, suction rolls, and drying equipment. The company is now enabled to improve still further its present high standard of quality, and is in position to give its agents everything to be had in the way of quality and service.

The Howard Company reports a strong and growing demand for its papers and its agents for Howard Bond and Howard Ledger all over the country are having great success with these water-marked lines.

Atlas Paper Co. Formed at San Francisco

[FROM OUR REGULAR CORRESPONDENT]

SAN FRANCISCO, Cal., May 18, 1922.—The Atlas Paper Company has been formed by J. Friedman and William Rothschild to carry on a paper merchandising business at 1122 McAllister street. The new concern will continue the business on an enlarged scale of J. Friedman who has been established in the paper business in San Francisco, for the past twenty years. William Rothschild, the new partner, has been connected for the past fourteen years with the San Francisco division of the Zellerbach Paper Company.

Grade	Lack of Orders		Repairs		Other Reasons		Total	
	1922	1921	1922	1921	1922	1921	1922	1921
News Print:								
Number of machines.....	10	16	9	12	13	9	32	37
Total hours idle.....	2,324	4,218	319	1,991	512	1,348	4,155	7,557
Book Paper:								
Number of machines.....	107	146	4	17	38	17	149	180
Total hours idle.....	17,692	36,902	25	4,743	3,199	2,071	15,916	43,716
Paperboard:								
Number of machines.....	154	211	49	6	9	59	302	297
Total hours idle.....	27,869	58,614	2,115	3,115	15,820	20,473	47,061	82,002
Wrapping:								
Number of machines.....	43	101	25	31	58	39	133	174
Total hours idle.....	7,661	22,863	2,231	4,792	4,183	15,104	14,379	41,979
Bag:								
Number of machines.....	15	11	8	1	9	11	32	23
Total hours idle.....	2,341	3,247	1,947	22	533	2,200	3,924	5,470
Fine:								
Number of machines.....	17	164	16	21	73	19	136	144
Total hours idle.....	12,230	33,638	1,444	9,459	8,112	1,372	21,606	47,469
Tissue:								
Number of machines.....	38	66	43	25	36	11	117	102
Total hours idle.....	6,076	17,374	3,359	4,633	4,285	2,008	13,970	24,025
Hanging:								
Number of machines.....	30	9	2	1	5	4	10	14
Total hours idle.....	1,088	2,921	116	17	438	391	1,672	3,329
Felts and Building:								
Number of machines.....	33	41	10	3	16	13	59	57
Total hours idle.....	8,178	8,767	678	114	1,661	2,413	10,517	11,294
Other Grades:								
Number of machines.....	3	63	9	11	32	11	70	85
Total hours idle.....	4,413	16,793	767	2,122	5,048	2,688	10,228	21,603
Total number of machines.....	480	769	184	141	376	203	1,040	1,113
Total hours idle.....	84,815	205,075	13,192	33,501	44,421	52,868	142,428	288,444

SIGNS OF SUMMER QUIETUDE IN PHILADELPHIA MARKET

Trade, However, Shows No Concern Over the Seasonal Decline in Demand But Considers That Business Is Now on a Sound Basis and Believes That Improvement Will Continue—Arthur B. Sherrill, of Riegel & Co., Elected President of the Philadelphia Paper Trade Association—Paper Men Consider Cost of Doing Business on Small Orders—D. L. Ward Co. Moves.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, May 30, 1922.—A test of the confidence which the trade has been expressing in the satisfactory condition of the paper business that is to come has been afforded by the experience of the last week or more, and the trade has been equal to it. Unquestionably demand in all the lines of fine paper fell off considerably, but just what the reason for this decline was is not yet evident. Nearly all the large printers cut down their usual requirements very markedly, although among the medium size and smaller shops the loss was not as great. The trade, however, without wasting time to ascertain the exact cause of the comparatively quiet times is not at all alarmed and regards the dullness largely as of a temporary character. Allowance was made at the time of the burst of activity some weeks ago for the extra printing incident to the very lively gubernatorial primary campaigns that were on. And the fact that the dull summer season also is approaching is given its proper importance. But underneath all the trade sees a sound condition in all industrial and commercial life and it recognizes evidence of undisputable character that permanent improvement has set in, and for these reasons it is not the least bit concerned over the slight loss experienced during the last week or so.

In the coarse paper division of the trade there still continues the rather dull times which have been noted for several weeks, but hereto there is the same confidence in the future as there is in the fine paper division.

The market for stock both old paper and rags still is virtually non-existent, there being hardly enough movements to establish prices. Mixed and commons are still in small supply because it does not pay to take them into the warehouses, and the meager mill demands easily can be filled from such supplies as the packers are compelled to take in largely to accommodate old customers. There is a little more activity in the fine market for the better grades.

Consider Cost of Doing Business

But though the trade is not at all concerned over business condition there were developments of great import during the week and these engage very close attention. They concern principally the fine paper distributors, but the interests of the coarse paper dealers is by no means inconsiderable, for the problem involved is the one brought vividly to the attention of the entire Paper Trade Association some time ago through the address of Mr. Schoenbucher—the heavy cost and actual loss of doing a small order business. Because of the importance of the problem Allen E. Whiting, as late president of the Paper Trade Association appointed a special committee of representative members of the trade to work out some plan that will solve the problem and in doing so preserve the equities of both paper dealers and their largest customers, the printers. This committee consists of George W. Ward of the D. L. Ward Company, chairman; Morgan H. Thomas, of the Garrett-Buchanan Company; Harry F. Donahue, of the Molten Paper Company; Leon Beck, of the Beck Paper Company; Harvey E. Platt, of the J. L. N. Smythe Company, and Allen E. Whiting of the Whiting Patterson Company. Its appointment was the last official act of Mr. Whiting and the membership was announced at the annual meeting of the

Paper Trade Association held during the week. The basic facts with regard to the situation have been well established. For months members of the association individually have been keeping accurate records of their sales and of the cost of doing business, and there was a surprising uniformity in the returns from the several firms which participated. For this reason it was possible to compile an approximately accurate statement covering the conditions in the entire industry in Philadelphia. It was shown that forty per cent of the number of orders filled were for amounts which averaged but \$2.66 per order, and that the next twenty per cent of the number of orders were for an average of but \$7.35, showing thus that sixty per cent of all the orders taken were for amounts considerably under \$10.00. But the committee also found that the actual cost of handling these small orders in overhead, bookkeeping, and delivery charges, and other incidentals actually ran to between 90 per cent and 100 per cent on all orders involving \$5.00 or less; in other words it was an absolutely demonstrable fact that on a very large percentage of the small order business, and to be specific on all small orders up to about \$5.00 there was a cost of the entire amount involved and that goods absolutely were being given away for nothing.

The trade realized that it is axiomatic that no business firm can continue unless it makes profit and that under the conditions set forth it is logical to draw the deductions that the actual loss sustained on the orders of say \$7.35 and less and constituting in number 60 per cent of all the business done must be made up and the legitimate profit on the entire business be sustained by the remaining 40 per cent of number of orders involving amounts of over \$7.35 each.

Confident That Question Can Be Solved

There is conviction that if these facts can be established, as the trade is confident they can be to the satisfaction of the fine paper buyers, a solution of the very important question now pending can be found. There is belief too that the present is the most auspicious time in recent years to have the question which equally concerns the paper sellers and the paper buyers fairly and considerably discussed. That fact lies in the circumstance that more harmonious relations now exist between the printer and the paper distributors than for years past. The contention which threatened amicable relations between the two, over the long price list is a matter of the past, with happy solution reported in these columns recently having been found. The conferences which preceded the agreement now in force gave printers a better understanding of the position of the paper men, and paper men a keener insight into the position of the printer with the result that each understand the other's point of view better than ever before. The trade believes that no great argument will be required to impress upon the printers the fact that the loss on small order business as it is now being done is being made up on the large orders. Printers every day come into contact with this problem, an analogous condition being that of course one hundred circulars cannot be sold at one-fifth the price of five hundred, nor can a one thousand edition of a catalog be produced at one-tenth the cost of a ten thousand run. The paper trade has, of course, no desire to take advantage of the situation and it believes that frank presentation of all the facts will make possible some change whether in the manner of doing business or of charges which will cut out the unprofitable business and perhaps tend to lessen charges for such orders as now perhaps bear a disproportionately large share of the cost of doing business.

Paper Trade Association Elects Officers

The Paper Trade Association at its meeting elected these officers: President, Arthur B. Sherrill of Riegel & Co., Vice-President, Harry F. Donahue of the Molten Paper Company, Secretary, Norbert A. Considine of the Paper House of Pennsylvania, and Treasurer, Harvey E. Platt of the J. L. N. Smythe Company. But it required nominations by the entire membership before the election

(Continued on Page 20)

May We Quote?

We are now booking tonnage for first open water shipment as well as for shipments for balance of the year 1922

WELL KNOWN SCANDINAVIAN

Unbleached and Easy Bleaching

SULPHATES

Unbleached—Easy Bleaching—Bleached

ALSO

MITSCHERLICH

SULPHITES

Let Us Quote You Our Prices!

A. J. PAGEL & CO., Inc.

347 Madison Avenue

New York City

SIGNS OF SUMMER QUIETUDE IN PHILADELPHIA MARKET

(Continued from page 18)

could take place. Mr. Sherrill for years has been chairman of the nominations committee, and of course thereby escaped possibility of serving as head of the association. But this year the committee got away from the chairman and insisted that he run. He refused. And so the committee brought back a report that they could not agree. The association sent them back a second time. And again there was no result. Thereupon nominations were made on the floor, Mr. Sherrill was overwhelmed and overwhelmingly was elected and all the other members of the nominating committee were chosen to fill offices which previously they had selected others to fill.

Ward Co. Moves

A large force of artisans have been assigned to the old home of the D. L. Ward Company at the N. W. corner of 6th and Ransstead streets, to get everything in readiness for the removal of the company into it from the warehouse at Front and Washington avenue, occupied for several months, on Wednesday of this week so that business can be done as of old on Thursday morning and without the least interference during removal. During the week there returned to the Ward organization, Arthur S. MacNair, who was a member of it for about two years previous to some six months ago when he left to go to the local office of the Whitaker Paper Company in the Crozer Building. Vice-President Roger D. Smith, of the S. D. Warren Company spent part of the week in Philadelphia, as the guest of President Ward.

Grissinger Machine Co. Moves

The Grissinger Machine Company, of Philadelphia, Pa., manufacturers of Slitters and Rewinders, whose plant for many years has been located at 904 Quarry street has moved to larger quarters at 236 Quarry street the same city.

To Job Blottings

Clyde A. Cobaugh, who for several years has been acting as advertising manager for the Paper House Of Pennsylvania, on June 1, will establish himself in business and on what he believes to be a unique line. He will deal exclusively in a jobbing way in blotting papers. He has secured quarters at 825 Walnut street and there will carry a complete stock of the products of the Standard Manufacturing Company, of Richmond, Va. There will always be on hand a large enough supply of the eight grades manufactured by this company to meet all requirements. Mr. Cobaugh before serving with the colors, during the course of the war falling a prisoner to the Germans, for more than five years served as advertising manager for the Beck Paper Company. Afterwards he represented in this city, Walden, Mott & Co., Inc., of New York. There was added to the sales force of the Paper House of Pennsylvania during the week, Leonard A. Peck, well known in the trade, long experienced and for several years associated with the C. H. Clinton Paper Company.

Arrangements for Graphic Arts Exposition

The paper trade is being appealed to for participation either individually or as a body, in the Philadelphia Graphic Arts Exposition to be held in the Commercial Museum, the largest exposition building in the United States. In September 25 to 30, inclusive. It has the endorsement of the Typotheta of Philadelphia, and its purpose as suggested by the title also was expressed in the slogan "Good equipment, good craftsmanship, good ink, good paper, and by all means good printed matter." The exposition is being conducted by J. H. Goodwin, formerly advertising manager of the *Kansas City Post* and now publisher of a textile trade journal. Announcement is made that one-fourth of the 100,000 square feet of exposition space already has been contracted for, although detailed prospects are not yet available.

Alfred M. Watt, for some time engaged in the specialty business at 218 Chancellor street has been appointed the Philadelphia distributor for the Peerless Manufacturing Company, of Norristown, Pa., succeeding Andrew Robinson who lately established himself in business as distributor for tissue toiles and paper towelings.

General News of the Trade

The Beck Paper Company has just stocked up a complete line of the new Damascan Cover, made by the A. M. Collins Manufacturing Company and regarded by the firm as one of the most exquisite pieces of cover paper every produced. It is manufactured in but one grade and two sizes, 20 x 26 and 23 x 33. It is produced in six colors all with a lustrous metallic finish and the samples which the firm now has available show that it lends itself most admirably to high class printing plain and in color and to embossing, and makes a striking cover for quality catalog and other high-grade work.

Proposals for the supply of paper for the Board of Education will be opened by the Committee on Property at the headquarters, 19th above Chestnut at noon Thursday, June 8.

The Scott Paper Company, of Chester is making a public offering of the unsold portion of its \$700,000 7 per cent cumulative preferred stock. Of this there is outstanding \$520,800. Thus far there have been paid on such of the stock as has been issued twenty-one semi-annual dividends of 3½ per cent.

In commemoration of a fifty year membership in the Masonic Order President John H. Sinex recently presented to the Merchantville Lodge of which he was a pioneer member, a set of mahogany furniture, including rostrum, stations and desks. Present at the ceremonies were almost a hundred members of the Masonic Order who are engaged in the paper, printing, stationery and allied trade. In recognition of services the members of the Garrett-Buchanan organization who are Masons, gave to Mr. Sinex a gold headed cane.

Salesmen of Hammermill Agents Meet

ERIE, Pa., May 25, 1922.—Paper salesmen from more than half a hundred cities of the United States are in Erie today for the meeting of the salesmen of Hammermill agents, being held at the Lawrence Hotel. This morning was given over to the registration of the visitors, and to the inspection of an extensive display of the Hammermill manufacturing process and the various lines of paper produced by the local company. This afternoon is being devoted to the preliminary business session, an address of welcome being made by E. R. Behrend, president of the Hammermill Paper Company. Other speakers on the afternoon's program are N. W. Wilson, vice-president of the company, who outlines the purposes of the meeting, and W. S. Epply, manager of sales, who speaks on the peculiar advantages of Hammermill methods and products that count in the sale of the Erie made paper.

During the afternoon the salesmen will inspect the Hammermill plant, returning to the Lawrence in the evening for a group dinner.

Protest Against Swedish Kraft Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1922.—It is understood that the American Paper and Pulp Association has filed a protest with the Customs Service of the Treasury Department in connection with the importation into the United States of Swedish kraft paper at prices which are said to be exceedingly low. It is probable that the Customs Service will institute investigation as a result of the association's communication.

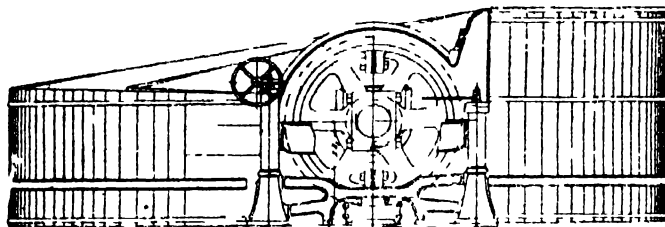
The Niagara Beater Gives Increased Production *at a Lower Cost*

The use of worn out or obsolete equipment under present conditions means operating at a loss. Replace your old beaters with Niagaras

ONE NIAGARA BEATER *Produces as Much as Three Holland Type Beaters*

The Niagara Saves in Beating Time, Floor Space
Installation Cost, Motors, Power, Belting and Labor

Write for further information. We can give
you convincing proof of the above statements.



"Ask the mill that owns one"

THE VALLEY IRON WORKS COMPANY

Appleton, Wisconsin

New York Office: 350 Madison Ave.

PAPER MERCHANTS OF BOSTON GOING AFTER BUSINESS HARD

John Andrew, of Stone & Andrew, Says Salesforces Must Be Reorganized and Taught to Go After Business Instead of Waiting for It to Come to Them.—While Business at Present Is Rather Slow, Boston Paper Merchants Are Making the Best of the Situation and Are Optimistic Regarding the Future—Boston Paper Trade Association to Hold Annual Summer Outing.

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., May 31, 1922.—There is business in Boston and other cities in New England in the paper trade if you can only educate the salesmen to go after it, John Andrew of the firm of Stone & Andrew, paper merchants on Devonshire street, said today. "We must reorganize our salesforces and teach them to get down to hard pan and go after the business instead of waiting for it to come to them," Mr. Andrew continued. Practically all of the orders being received by the Boston paper merchants have been small ones this year and while they total up in volume to even more than those of last year they mean considerable more work for the forces in the different houses to handle, more clerks in the shipping rooms, and therefore more expense.

Mr. Andrew stated that he had just returned from a trip through the northern New York territory and found things quiet at the mills because the orders were not coming in as fast as the paper was being turned out.

However, Boston merchants are optimistic and are making the best of the situation and going out after the business. They expect hard times during the summer months when the other people are thinking of vacations instead of buying merchandise and they feel that there must be a decided change for the better within a few months. Practically all of the men in the trade are working hard at the game this spring. The vacations have been cut down somewhat in some of the houses and the men are sticking closer to their business which in the end is bound to bring in the business and bring back the general condition of prosperity to the trade.

To Make Paper Umbrellas

Word has been received in Boston of the manufacture of paper umbrellas which will be taken up by the new company formed in Bethel, Maine, with Frank Berry of New York, as president, and F. E. Pullman of Rumford, Maine, as secretary and treasurer. Paper parasols as well as umbrellas will be manufactured, and Tyler's Mill on Summer street, Bethel, Maine, will be used for this new enterprise. The principal office of the concern will be in New York City. The umbrellas will be waterproofed and made of a special paper. Plans are under way for the manufacture of ice cream packages by the same concern. It is expected that about two hundred umbrellas will be turned out per day.

Boston Paper Trade Outing

The Boston Paper Trade Association, one of the liveliest paper trade organizations in the United States, will hold its annual summer outing at the Vesper Country Club, Lowell, Mass., this year on Wednesday, June 7. It is expected that a large number of the members will attend this year because of the interest which has been shown in the work of the association. Most of the members will make the trip by automobile through Harvard Square, Cambridge, North Cambridge, Arlington, Burlington, Billerica, Lowell and to the Country Club which is about five miles from the center of the city.

A prospectus which Joseph D. Snell, secretary of the organization, and a member of the firm of Von Olker-Snell Paper Com-

pany on Pearl street, has sent all of the members of the association, gives detailed directions for reaching the Vesper Club by auto, train, trolleys, as well as by hydroplane (the water of the Merrimac being "soft") and by aeroplane. (Permission is given to land anywhere but not any nearer than one mile from the 19th hole.

An interesting program of events has been arranged by the committee which includes tennis, golf, baseball, and various kinds of races including a pipe and cigarette lighting race, a tape cutting contest, a three legged race, balloon, shoe and paper races, and quoits, bridge and other indoor sports. Dinner will be served at the Country Club. During the forenoon a buffet luncheon will be served in the Locker House.

The golf tournament will include a handicap medal play of 18 holes with Massachusetts or Home Golf Club handicaps accepted and foresomes with the groups arranged by the committee. A silver cup is being presented for the first time this year to be known as the Boston Paper Trade Golf Championship Cup and on being won three times by a member becomes his permanent property.

Old "grievances" between the manufacturers and merchants will be worked off in the fast ball game arranged between those two groups for that afternoon. Five innings will be played unless the players go on strike and the ball to be used will be soft enough to please the "gentlemen" players and large enough for the near-sighted stars.

General News of the Trade

The American Writing Paper Co., of Holyoke, Mass., has issued a booklet on Eagle A papers which is being distributed in Boston by its agents, The Arnold Roberts Company, of Congress street, John Carter & Co., Inc., of Atlantic avenue, and The Whittaker Paper Company, of Shawmut avenue, the Eagle A Service House, of Boston. The booklet is entitled "The Correct Use of Bond Papers for Business Purposes" and in this valuable new office handbook the Paper Service Manufacturing Institute, as the American company is called, shows how to measure the right grade of bond paper for each business need. It thus enables the firms to put paper buying on a firm basis and gives an intelligent standard for selection of their papers. All of the various grades of bond papers for business are "boiled down" into 9 standard papers, known as the Eagle A bond papers.

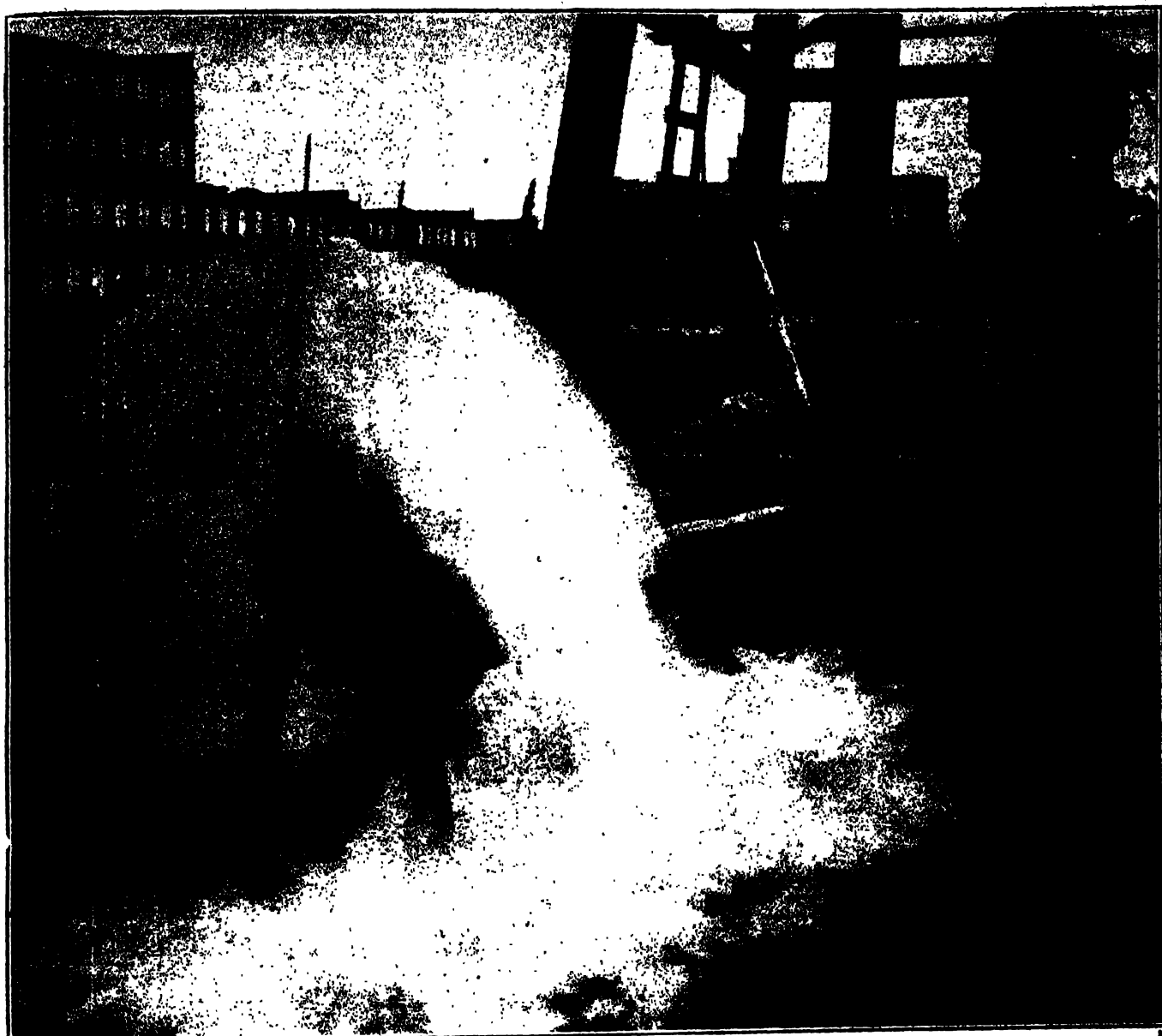
Paul M. Jones, of Melrose, Mass., salesman for the A. Storrs & Bement Company, whose district is Essex county, Massachusetts and the state of Vermont, and Mrs. Jones are the proud parents of a young son.

The Powers Paper Company, of Springfield, Mass., manufacturing stationery for nearly sixty-five years, is making a drive on Shetland Linen which it claims has always been priced way below stationery of similar quality even during the period of high prices. This linen is offered in many sizes and styles and in white and five tints.

Among the Boston paper men at the annual meeting of the Strathmore Mill and Merchants' Association held at Mittineague, Mass., last Thursday and Friday were Mr. Palmer of Carter, Rice & Co.; H. W. Morgan, sales manager of the same firm, and John C. Hurd, advertising manager of the A. Storrs & Bement Company and J. H. Brewer, announcement department manager of the same firm.

Address of James P. Franklin Requested

The PAPER TRADE JOURNAL has been requested for the address of James P. Franklin who was formerly a salesman for one of the New York paper houses. He left Philadelphia about fifteen years ago. If living he would now be about seventy-five years old. If Mr. Franklin or his relatives will communicate with the PAPER TRADE JOURNAL they may learn something to their advantage.



The above cut shows one of two wells recently constructed by us for The Richardson Company, Lockland, Cincinnati, Ohio, which are furnishing over 7,000,000 gallons of water per day. In a recent letter, Mr. J. M. Richardson, President, said "All of our other present wells are now obsolete"; also, "Our new wells have, in our judgment, added hundreds of thousands of dollars to the value of our property and ended for all time to come the old problem of a plentiful supply of good water."

Our Slogan:

"WATER OR NO PAY"

We construct and equip

Large Capacity Water Wells

Using the Layne Screen
and

Layne Vertical Turbine Pumps

*Sole Selling Agent for Layne
Products in Ohio and Indiana*

THE LAYNE-OHIO COMPANY

WATER WELL CONTRACTORS

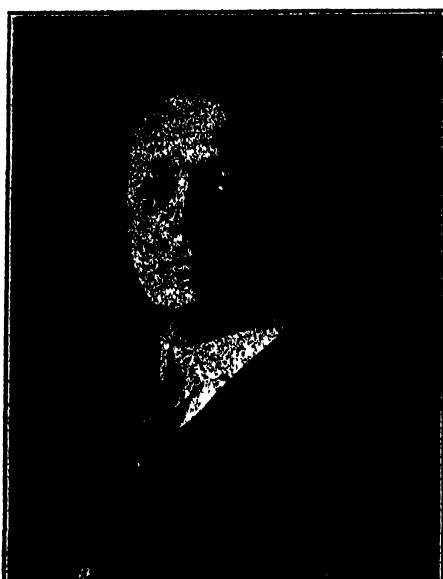
837 Dixie Terminal Bldg.
CINCINNATI, OHIO

MAINE SUPERINTENDENTS HOLD SUCCESSFUL MEETING

B. M. Petrie of the Eastern Mfg. Co. Is Elected Chairman of the Northeastern Division of the American Pulp and Paper Mill Superintendents' Association at Meeting of the Organization at Elmwood Hotel, Waterville—Next Meeting to Be Held at Lincoln, N. H., in October—Robert B. Wolf of Robert B. Wolf Co. Delivers Interesting Address on Bleaching at High Density.

[FROM OUR REGULAR CORRESPONDENT]

WATERVILLE, Me., May 29, 1922 The Northeastern Division of American Pulp and Paper Mill Superintendents' Association held a very successful meeting at the Elmwood Hotel here on Thursday



B. N. PETRIE, CHAIRMAN-ELECT

of last week. The meeting was presided over by Nelson R. Davis of the S. W. Warren Company.

The New Officers

The following officers were elected:

Chairman, B. N. Petrie, Eastern Manufacturing Company.

First Vice-President, Fred P. Sall, Pejepscot Paper Company.

Second Vice-Chairman, Eugene Sullivan, Orono Pulp and Paper Company.

Cooking Time Hours	Cooking Acid % Free	% Comb.	Maximum Cooking Temp. °F	Pounds Sulphur per Ton	Pounds Bleached Pulp per Cord Wood	Percent Yield by Weight	Pertent Gain.
10 1/2	2.50	1.30	315	300	1000	40	
10 1/2	6.00	.95	285	250	1176	47.1	17.6

Note: The wood averaged about 70% Spruce & 30% Fir.

FIG. 1

Third Vice-Chairman, A. B. Larcher, Penobscot Chemical Fibre Company.

Secretary-Treasurer, B. T. Larrabee, S. D. Warren Company.

It was decided to hold the next meeting at Lincoln, N. H., early in October, 1922, the exact date to be fixed by Chairman-elect Petrie.

The following new members were elected:

J. S. Schamaker, Parker Young Company.

George W. Verron, Lincoln Mill, Eastern Manufacturing Company.

W. D. Summerville, Eastern Manufacturing Company.

After luncheon the superintendents visited the plant of the Keyes Fibre Company at Fairfield, Me.; the Keyes Pulp Mill at Shawmut, and the Waterville Iron Works.

Address by R. B. Wolf

At the conclusion of an enjoyable banquet Robert B. Wolf, head of the Robert B. Wolf Company, New York, delivered the following interesting address on "Advantages of Bleaching Pulp at High Density."

Under a given set of bleaching conditions, with time of bleaching held constant, it may be stated that both the consumption of bleach and per cent shrinkage vary directly with the temperature, and inversely with the concentration of the solution.

Expressed in another way: to lower the amount of bleach liquor required for bleaching a given pulp, in any given kind of bleaching apparatus, under constant temperature, it is necessary to increase the concentration of the solution. When the per cent of bleach is decreased in this manner, the shrinkage in weight of pulp, due to bleaching, is proportionately decreased.

The effect of varying conditions of temperature and concentration of solution on consumption of chemical reagent and shrinkage in raw material is much better known in the process of cooking sulphite pulp than in the bleaching process. This relationship is shown in Fig. 1, made up from records of several years' actual operating experience.

The wood averaged about 70 per cent spruce and 30 per cent fir.

That a similar relationship between temperature and concentration of solution also exists in bleaching pulp is shown in Fig. 2, taken from mill operation conditions.

In the above chart the per cent bleach used was practically constant, although there was some variation in the time of bleaching.

It was a knowledge of the effects of concentration of solution and solution temperatures upon bleach consumption and shrinkages that brought about the development of apparatus for bleaching at greater densities. It had been known for some time that when the temperatures were kept low, which was accomplished largely by increasing the concentration of solution, that organic dirt could be bleached out. Bleached pulp is always freer from shives and discolored woody matter than unbleached pulp. In spite of this well known fact, however, the mechanical difficulties in the way of circulating very thick stock have until recently, prevented practical results along this line.

The first bleaching apparatus in pulp mills generally used consisted of a series of tanks, with vertical agitators. The stock

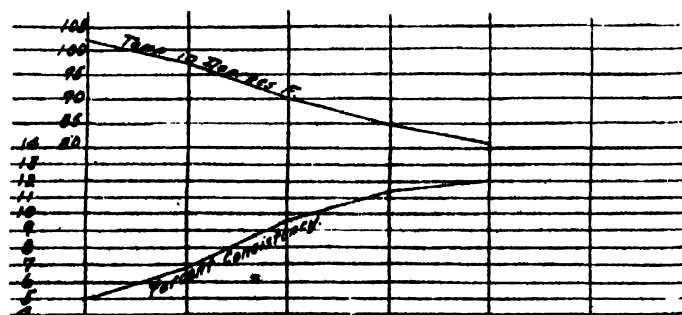


FIG. 2

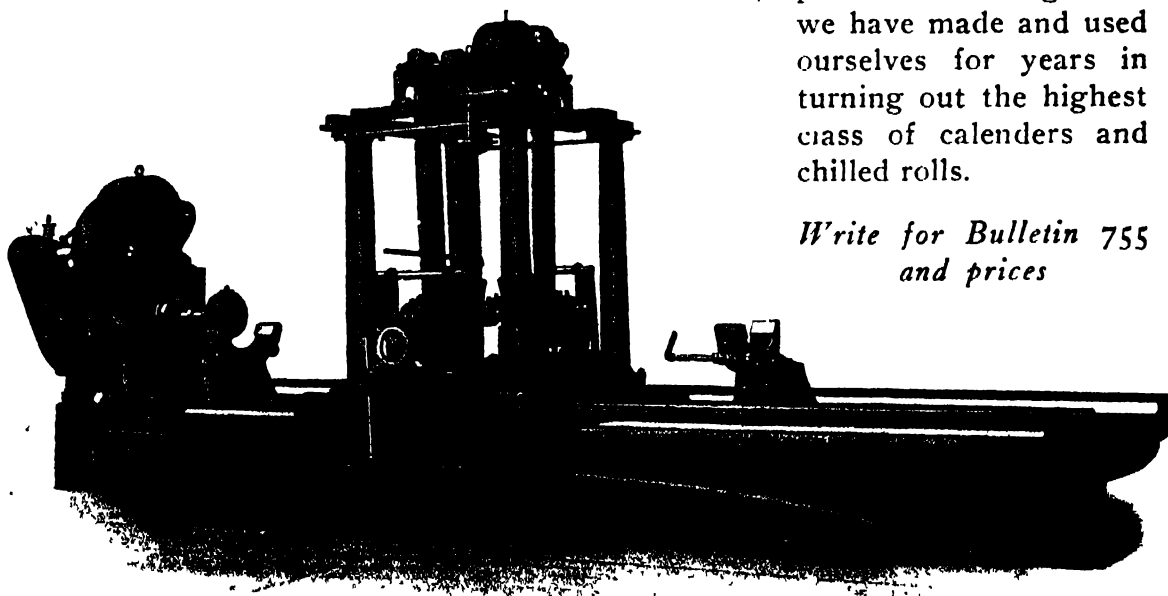
usually overflowed from the top of one tank into the bottom of the next. As the advantages of thicker stock became apparent, a pump was interposed so that the stock overflowed into the suction of the pump and was pushed into the bottom of the tank. For obvious

(Continued on page 26)

Roll Grinders

For the sake of your product regrind your old Farrel rolls, or any others, on this heavy, sturdy instrument of precision—a roll grinder we have made and used ourselves for years in turning out the highest class of calenders and chilled rolls.

*Write for Bulletin 755
and prices*



Farrel Foundry & Machine Company

Established 1848

Ansonia, Conn.

**Branch Plant:
BUFFALO, N. Y.**

MAINE SUPERINTENDENTS HOLD SUCCESSFUL MEETING

(Continued from page 24)

reasons, it was impractical to handle this stock at a density much greater than 4 per cent. Most of these tank systems were continuous systems and had the disadvantage of difficulty of control especially where the bleaching quality of the pulp varied considerably.

What is known as the Bellmer bleacher was later introduced into this country, with very good results. Better control was obtained because the process was intermittent and the amount of bleach added could be governed by the bleaching quality of the stock.

Furthermore this process, because it used a worm in place of a pump, made it possible to circulate stock at densities as high as 6 per cent, and later developments with this type of bleacher, where the Bellmer worms are placed at both ends.

Another development was also a continuous tank system where the pulp was handled with worm propellers, similar to the Bellmer propeller. The pulp was introduced into the top of the first tank traveling downward to a worm which forced it into the bottom of the second. In the second tank, the travel is upward. By means of another worm conveyor, the stock was conveyed from the top of the second to the top of the third tank, where it traveled downward again. Another worm conveyor conveyed the stock from the bottom of the third to the bottom of the fourth, and so on through the entire system. Stock densities as high as 12 per cent were obtained.

The next development was also a continuous tank system where the pulp was handled with worm propellers, similar to the Bellmer propeller. The pulp was introduced into the top of the first tank traveling downward to a worm which forced it into the bottom of the second. In the second tank, the travel is upward. By means of another worm conveyor, the stock was conveyed from the top of the second to the top of the third tank, where it traveled downward again. Another worm conveyor conveyed the stock from the bottom of the third to the bottom of the fourth, and so on through the entire system. Stock densities as high as 12 per cent were obtained.

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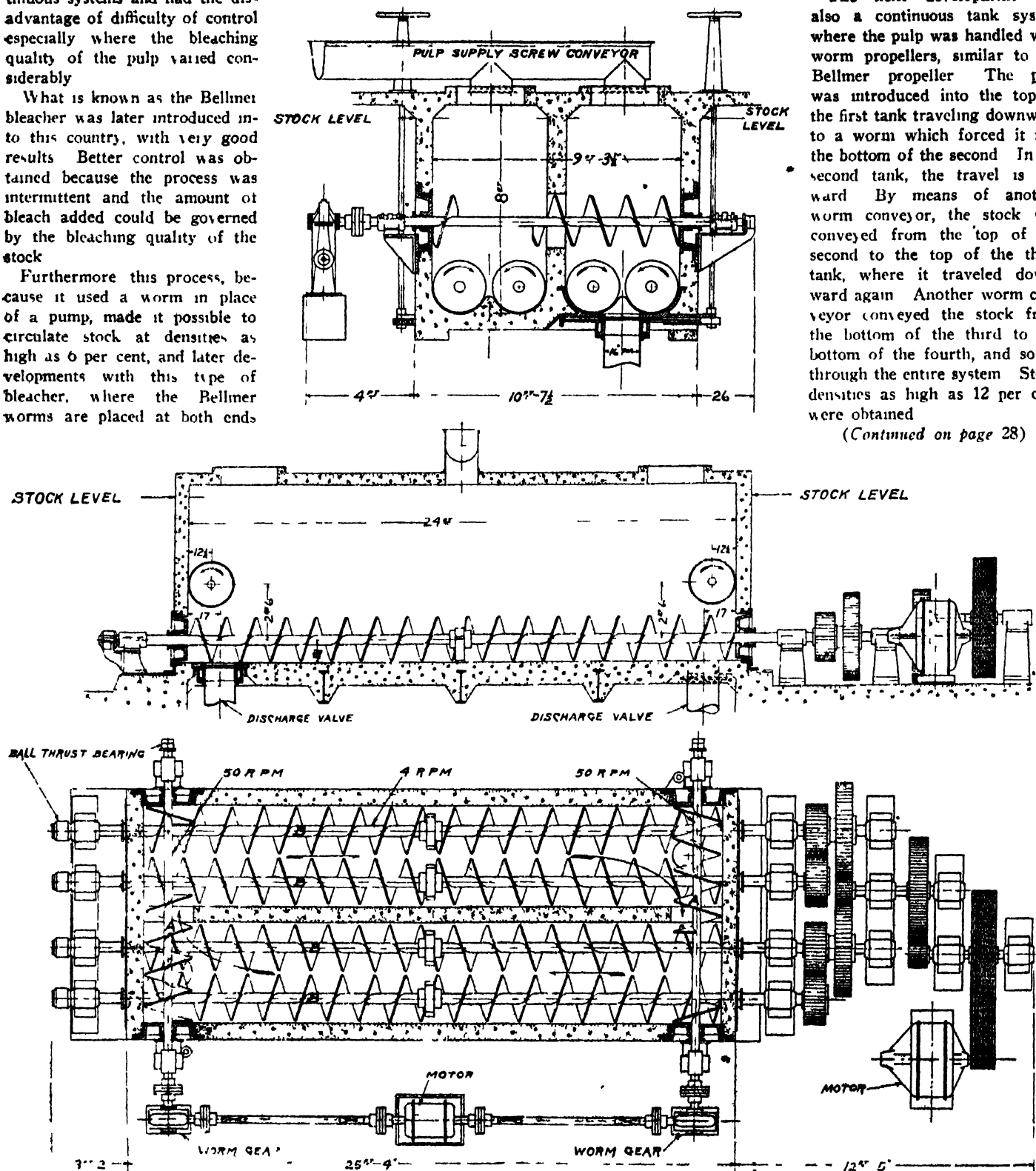
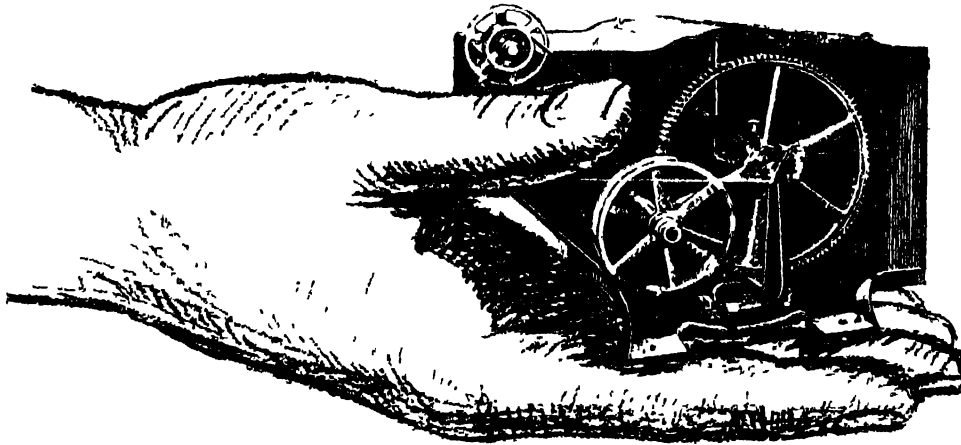


FIG. 3



Helping the Cause

The movement toward elimination of waste, sponsored by the Federated American Engineering Societies, is today one of the most hopeful signs of progress in industry.

As one contribution to the share of the paper industry in this forward work we have developed the BIRD SAVE-ALL.

This is a commonsense pulp saver, an effective detector of leaks and a practical white water filter. It is aiding pulp and paper mills to turn white water waste into profit.

Let us tell you how.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.

Western Representative
T. H. Sazery Jr., 1718 Republic Bldg
Chicago, Ill.

Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Ltd.,
260 St. James St.,
Montreal, Canada

THE BIRD SAVE-ALL

MAINE SUPERINTENDENTS HOLD SUCCESSFUL MEETING

(Continued from page 26)

When the consistency of stock in this type of bleaching system reached 10 per cent, however, the power required increased very rapidly and enormously heavy agitating devices had to be used. It was found impractical, with this type of system, to raise the stock to greater densities than 12 to 13 per cent, although obviously the advantages of so doing were quite apparent.

All of these previously mentioned systems are more or less familiar, so it is unnecessary to illustrate them.

The gradual development of bleaching systems to handle thicker stock clearly indicated that the increased efficiency in the use of

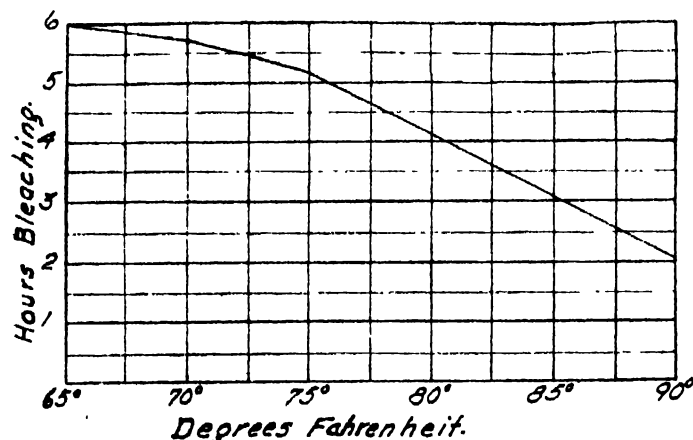


FIG. 4

bleach and the decreased shrinkages were due to the fact that the great concentration decreased the resistance that the bleaching agent had to overcome. Therefore more work was accomplished at lower temperatures.

It is probable that the law of bleaching is somewhat similar to

Ohm's law, which is expressed by $C = \frac{E}{R}$, where C equals the current, representing the quantity element; E representing the electromotive force, or the intensity element; and R representing resistance, or the inertia which must be overcome. We might, therefore, express the law of bleaching as follows:

$$\text{Bleaching energy expended} = \frac{\text{Temperature of bleaching}}{\text{Resistance to bleaching}}$$

As suggested previously the effect of increasing the concentration is to lower the resistance to the bleaching agent, which means that the lignin can be removed more easily because the oxidizing agent is brought into more intimate contact with the lignin and coloring matter in the fiber.

The apparatus, which will now be illustrated (See Fig. 3) was developed with a full realization that if a great concentration of solution could be obtained a big reduction would be made in the per cent. bleach used; also a great saving in fiber because of low shrinkages. It was also developed with a full consciousness that it would be possible to bleach out practically all organic dirt if a great degree of concentration were used.

In Fig. 3, it is apparent that the principle on which the apparatus is based is thoroughly mixing the stock and bleach liquor at frequent intervals, this being accomplished by means of the cross worms, A; the longitudinal worms, B, simply acting as conveyors for moving the stock in a solid mass, in the direction indicated by the arrows.

The worm, B, rotates at 4 r. p. m. only and the stock takes five

minutes to travel from one end of the bleacher to the other. At each end, however, a very thorough mixing of the stock and bleach liquor takes place, as the stock must be forced through the 24 inch diameter opening in the central partition at each end.

There is practically no limit to the density of the stock which can be circulated in an apparatus of this kind, as the very slow moving bottom worms do not take excessive power; furthermore the fact that the cross-worms simply convey the stock from one side of the central partition to the other, means that the power consumption is low—much lower in fact than where the heavy stock is forced through an elongated opening. Bleach liquor testing about 25 grams per litre is used in this process.

In order that the pulp content in the bleacher does not drop below 18 per cent after the bleach liquor is added, it is necessary to deliver the pulp to the bleacher at not less than 25 per cent air dry. This is accomplished by "doctoring" the pulp off of the press roll of a regular wet machine and conveying it from the wet machine to the bleacher, by means of a worm conveyor. In the case of a paper mill bleaching lapped or sheet pulp, the pulp is furnished direct to the bleacher after passing through a shredder.

At the end of the bleaching operation the pulp is preferably dropped into a drainer chest, where it is flooded with water. After watching in the drainer chest it is sluiced into a storage tank, from which it is pumped to a riffler. On the riffler it is diluted to between three and four-tenths per cent in order to settle out the inorganic dirt. From the riffler the stock goes direct to the wet machines or dryers, most of the white water from these wet machines being used over again in diluting the stock on the riffler. Of course a modification of this arrangement can be made in order to meet local mill conditions.

Bleaching time, at different temperatures, is shown on Fig. 4, representing a composite average of some 150 tests on full size units.

It will be noted from this graph that the time required for bleaching at 18 to 20 per cent consistency is much less than at 5 to 6 per cent, so the power consumption per ton of pulp is not greater than when the thinner stock is used.

Tests made at the Newton Falls Paper Company, where three of these units are in full operation, show the following:

In the above tests shrinkages represent the overall loss between the pulp actually weighed into the bleachers and the pulp actually weighed off the wet machines.

Under normal bleaching conditions, strong hemlock pulp would shrink at least 10 per cent and the bleach consumption would be in the neighborhood of 25 per cent.

Assuming, therefore, for spruce pulp a shrinkage of only 25 per cent less, and a reduction in bleach consumption of only 25 per cent, the saving because of the thick stock would be as follows:

Saving in fuel, with coal at \$7 per long ton.....	70
Saving in bleach, figuring normal percentage at 13, and bleach powder at 2¼c. per lb. f. o. b. mill.....	1.47
Saving by reduction shrinkage from 10 to 7.5 per cent, figuring unbleached pulp at \$60 per ton.....	1.82

Total saving\$3.99

In the Newton Falls plant, however, the greater saving came from the fact that all the old hemlock wood, which had been accumulating for two or three years because it was too poor for even wrapper stock, was used up without culling a stick for firewood. Everything, in other words, which would hold together, long enough to go through the chipper was used and, while this wood contained an average of over 30 per cent red rot, the resultant pulp

(Continued on page 30)



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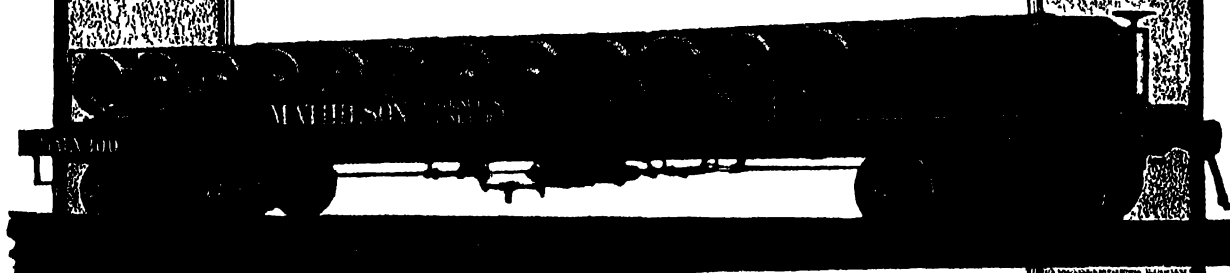
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CANADIAN PAPER INDUSTRY ON SOUND FINANCIAL BASIS

In Spite of the Fact That the Industry Has Been Passing Through One of the Most Trying Periods of Its History and In Consequence Not Much Interest Has Been Manifested of Late by the Public in Pulp and Paper Issues on the Stock Exchange the Future for the Paper Business Seems Bright—Canada's Paper and Pulp Export Show Decline for April, 1922, as Compared with April, 1921.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., May 29, 1922.—A marked change has come over public sentiment in regard to the pulp and paper industry. Up till quite recently, the pulp and paper issues had occupied the center of the stage on the Stock Market for several years, first by their phenomenal advances and secondly by their phenomenal fall. During the past few weeks the paper issues have been practically neglected. This tendency has been interpreted in some quarters as unfavorable to the pulp and paper industry. This interpretation, in well-informed circles, is disregarded. In fact, it has been argued that market indifference, under the particular circumstances, may be given the opposite interpretation. The fact is that in the pulp and paper industry, the feeling of depression and discouragement has entirely passed away. There still remains to be absorbed a fairly heavy depreciation on pulpwood, but this is taking place regularly and according to sound financial procedure. Practically all financial reports of pulp and paper companies, issued after 1920, took cognizance of the situation in one form or another, some writing the wood piles down in drastic manner and others setting up a reserve for that purpose. All financial statements issued in 1922 have made heavy allowances of similar character, and, no doubt, statements still to make their appearances, will do likewise. Thus the loss from drop in prices will spread itself out over a period until the financing is adjusted completely to the new situation. Meantime, there is a chance that the actual loss may not be quite so heavy as was anticipated. In some quarters, hope has been expressed that prices of the manufactured product may show some improvement in 1922. This view is opposed in other quarters and it does not seem that any particular aid will be forthcoming in this manner. What can be looked for, and what is taking place, is increased consumption, so that pulp and paper industries are operating much nearer to capacity or actually operating at capacity, thus reducing the per-ton costs of production. Companies have faced the situation and taken the loss and are assured that at present costs of getting out wood they will be able to make good profits. The situation is that, following one of the most difficult periods in the trade, the Canadian end of the industry finds itself, for the most part, in sound financial position and with a bright future ahead—barring labor and similar troubles. Under the circumstances, the neglect of the market for pulp and paper issues is not an indication of disappointment or of adverse conditions. The position is excellent. It must not be forgotten that the recovery in pulp and paper stocks was unusually sharp and well sustained and that the rise in price has been all that could well be justified by industrial conditions. Until further developments take place, it will be as well for all if the market should remain much as at present, unless in particular stocks which have not yet reflected the full improvement.

Timber on Vancouver Island

Speaking before the Vancouver Island Association Boards of Trade, E. W. Neel estimated the standing timber of Vancouver Island at 116,000,000,000 feet. In that portion of the Island which

includes the Esquimalt and Nanaimo Railway belt, the Renfrew district and Barkley Sound drainage basin, there are estimated to be 30 billion feet of Douglas fir and 13 billion b.m. feet of red cedar.

New Abrasive Paper Company

The Western Abrasive Paper Company, Ltd., has been incorporated with headquarters at Victoria, B. C., for the purpose of manufacturing sandpaper. The company is using as abrasive material a hard crystalline quartz from the Prince Rupert district, which has proven to be of hardest quality.

Canada's Pulp and Paper Exports

Canada's exports of pulp and paper for April were valued at \$6,490,359, a considerable decline from the previous month when the value was \$10,672,332 and a decline of \$455,877 from the month of April, 1921.

The figures for April, 1922 and 1921, are as follows:

		April, 1921		April, 1922	
		Cwts.	Value	Cwts.	Value
<i>Paper:</i>					
Book Paper	.....	6,314	83,796	35	560,000
News Print	.....	949,269	5,241,893	1,229,046	4,371,961
Other Paper	.....		405,965		319,542
			5,731,654		4,692,063
<i>Pulp:</i>					
Sulphate Kraft	.....	98,103	424,430	163,248	511,615
Sulphite, Blechd.	.....	40,711	254,345	162,982	654,903
Sulphite, Unblechd.	.....	98,744	404,380	166,346	452,564
Mechanical	.....	64,070	131,427	128,957	179,214
			301,628	1,214,582	621,533
					1,798,296

The principal countries of destination of these exports were:

	Paper	Pulp	Total
United States	4,031,226	1,588,806	5,620,032
United Kingdom	122,107		122,107
All Other	538,730	209,490	748,220

Exports of pulpwood were smaller in April, being 49,076 cords valued at \$476,344 compared with 96,998 cords valued at \$955,983 in March and 73,017 cords valued at \$977,537 in April, 1921.

MAINE SUPERINTENDENTS MEET

(Continued from page 28)

produced a high grade, exceptionally clean bond paper—a paper which, on a folio basis, tested over 1.25 points per pound.

Very little care was used in the preparation of this wood, which was mostly peeled, for any bark or knot linings which went through with the chips was entirely bleached out; in other words, any organic dirt which passed through a 9/1000ths cut plate was rendered colorless in the bleachers.

The results obtained in this new process points to a complete revolution in bleaching methods. It is no longer necessary to spend enormous amounts of time and energy in cleaning of wood in order to produce clean pulp; furthermore the tremendous waste because of culling out discolored and rotten wood will be practically eliminated.

G. K. Gibson Speaks at Ad Men's Post

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, May 29, 1922.—George K. Gibson, "The Man Who Put Across 'Mossinee Kraft' When Other Lines Were Hard Hit" was the principal speaker at a luncheon gathering of the Ad. Men's Post of the American Legion, held in the Ivory Room of Mandel Brothers, Monday, May 22.

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Obituary

George F. Hewitt

George F. Hewitt, nephew of the former Mayor of New York, Abram S. Hewitt, died suddenly last Thursday at his home in Montclair. Mr. Hewitt was seventy-three years old at the time of his death, having been born in 1849 at No. 28 Bleecker Street, New York. He was Chairman of the Board of Directors of C. B. Hewitt & Bros., paper and glue concern, of 16-18 Ferry street, and was one of the founders of this company in 1868.

The firm was located at 48 Beekman Street for many years, and now has for its president, George F. Hewitt, Jr., son of the late Mr. Hewitt. His death came as a distinct shock to members of his family, who were aroused by his heavy breathing Wednesday night and sent immediately for a physician. Mr. Hewitt was dead before medical attention could be secured. He had been in attendance upon his business the preceding day and was apparently in the best of health.

He is survived by his son, George F. Hewitt, Jr., and his widow, Jessie L. Hewitt. Business of the company, C. B. Hewitt & Bros., was suspended Saturday and a large delegation of employees and business associates attended the cortege. Funeral ceremonies took place at 12:30 last Saturday afternoon at his home, and the body was interred at Greenwood Cemetery. Actively engaged in the paper industry since the close of the Civil War, Mr. Hewitt was highly esteemed for his integrity and fairness in business dealings extending over half a century, and his loss is mourned by scores of men who knew him intimately.

J. Howard Welch

[FROM OUR REGULAR CORRESPONDENT.]

WATERVILLE, Me., May 29, 1922.—J. Howard Welch, superintendent of the printing plant of the Hollingsworth & Whitney Company, in Winslow, died last week at the age of 57 years. Mr. Welch was one of Waterville's most highly esteemed citizens. He was prominent in all civic activities, and was possessed of such an unusually fortunate personality that to once meet him meant to always afterwards consider him a friend. He was a 32nd degree Mason, having been active in the Commandery and Shrine, and was also honored by fellow members of the Elks, Knights of Pythias, Modern Woodmen of America, Chamber of Commerce, Red Cross and Rotary Club. Among the honorary bearers at the funeral were several 32 degree Masons, also Hon. Charles F. Johnson, United States District Court Judge and former United States Senator; Ex-Governor F. W. Plaisted, President Arthur J. Roberts of Colby College and George H. Marr, of the Hollingsworth & Whitney Company. All of the organizations mentioned were represented by delegations at the funeral, the city of Waterville being represented by Mayor Leon O. Tebbetts. The Hollingsworth & Whitney Company sent Robert Nivison, Percy Cram, Frank Rollins and W. H. Bowden.

The Rotary Club held a special meeting this week in honor of the deceased, several speakers expressing their heartfelt admiration. Mr. Marr, his colleague at the mill for 24 years, said that Mr. Welch always had a clear understanding of what was required and a good idea of the best way to attain the desired result. He had a faculty of maintaining harmony and cultivating a spirit of good will among the employees under him, which was manifested in many ways.

Pulpwood Men Join Interests

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., May 29, 1922.—Three prominent concerns that handle pulpwood in Northern New York and Canada have joined interests and in the near future it is expected the partnership

will become a corporation. E. W. Elsworth of this city, James A. Murray of Potsdam and A. H. Kennedy of Kingston, Ontario have joined interests.

The purpose of the amalgamation is to better serve the trade throughout the section without a duplication of effort.

E. W. Elsworth has been handling pulpwood for seven years, with offices in this city. He purchases timber in Canada and supplies it to mills in Northern New York. Before entering this business he was for 10 years connected with the Remington group as a stockholder and superintendent. He will now handle the office work of the combination and will occasionally visit the mills and the woodlands located in Quebec.

Mr. Murray is thoroughly familiar with the pulpwood and paper business, having been connected with the A. Sherman Lumber Company for 20 years.

Mr. Kennedy is a man especially familiar with woodlands. He was formerly a minister but poor health influenced him to withdraw from his profession and take up a life in the woods. He is familiar with the timber lands of Ontario and has a wide acquaintance with wood shippers. He will devote most of his time to the shipping department and see that the wood is right and promptly delivered.

New Pulpwood Railroad for Maine

[FROM OUR REGULAR CORRESPONDENT.]

AUGUSTA, Me., May 25, 1922.—Promoters of the Eastern Maine railroad appeared before Examiner James C. Clark of the Interstate Commerce Commission here today and gave as reasons for the construction of the new line that it will open up a vast section of the state rich in long lumber and pulpwood. The proposed road, to run from Houlton to Bangor a distance of 128 miles, will traverse a thickly wooded country which has not been lumbered as extensively as other parts of the state on account of the comparative scarceness of driving streams. Attorneys for the Maine Central, Canadian Pacific and Bangor & Aroostook railroads were represented at the meeting. Affiliated with the Eastern Maine railroad corporation is the Mattawamkeag & Eastern railroad company, which asks permission to build from Mattawamkeag to Bangor. Securities asked for the two roads are approximately \$3,500,000.

Rates on Import Paper Stock

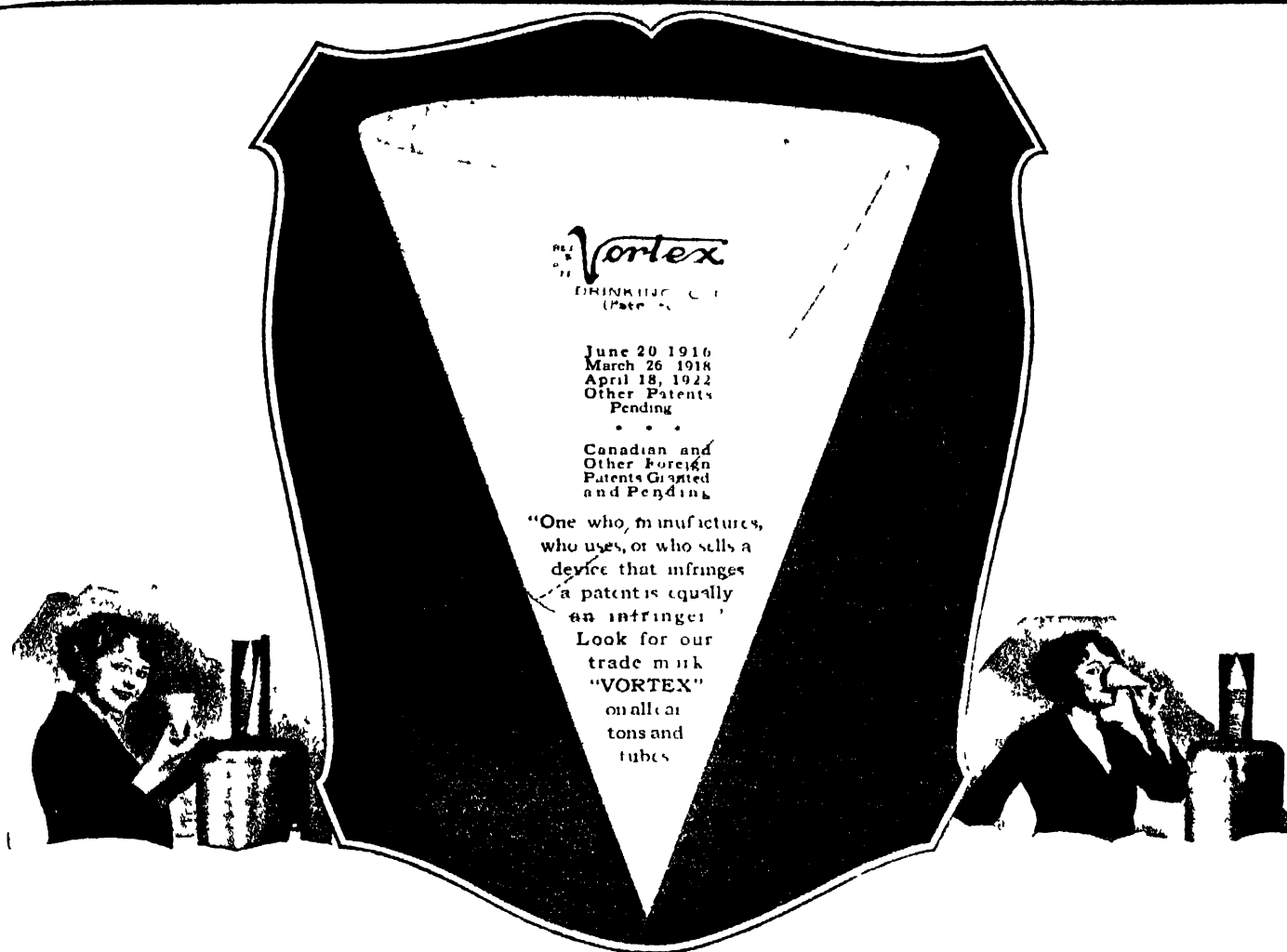
Effective June 15, 1922, rates will be established on import paper stock, viz: Rags and waste paper, pressed in bales; cotton rones and cotton sweepings; cotton and jute waste, tailings, and old rope, straight or mixed carloads, min. wt. 30,000 lbs. to C. F. A. territory. Below are shown rates to a few representative points:

		Baltimore
From—	New York	Philadelphia and Norfolk
To—		
Monroe, Mich.	40	37
Hamilton, O.	40	37
Kalamazoo, Mich.	42½	39½
Chicago, Ill.	46	43
St. Louis, Mo.	54	51

Cushnoc and Kennebec Paper Co. Show Improvement

[FROM OUR REGULAR CORRESPONDENT.]

AUGUSTA, Me., May 30, 1922.—Improvement in the affairs of the Cushnoc Paper Company and Kennebec Paper Company for which a receiver was appointed a few months ago is reported to Judge Peters of the United States District Court by the receiver, Walter S. Wyman. The companies, he reported, have not only paid operating expenses since the receivership went into effect, but even show a small margin of profit. The policy of the present management will be continued.



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Vortex, the pioneer cone shaped paper cup, has been in use for years. It has won its leadership not alone because of its unique design, but because of its economy and sturdiness, which cannot be duplicated in a flimsy, cheaply made cup.

This unusual strength is due to the firm, heavy quality of the paper; its reinforcement, on the outside, with paraffin wax; and its extra reinforcement about the bottom. It is substantial and rigid; needs no holder.

Vortex Cups are needed in every office, factory, theatre, club, bank, hotel and store. They are manufactured in such enormous quantities that they can be sold, with *excellent profit*, at a *very low price*. Distributors are invited to write for prices and terms.

Vortex Drinking Cups have these special features:

Made of clean, strong, pure white paper

Carefully sterilized in manufacture. Meet requirements of Pure Food and other existing Laws.

Reinforced on the outside with pure, fully refined paraffin wax. Strong and rigid.

Have no wax on inside. Cups are tasteless and odorless.

No glue is used in their manufacture. Sealed, under pressure, with paraffin.

Spiral wrapping reinforces cup.

Extra reinforcement about bottom of cups prevents cups sticking together.

Will not absorb moisture or leak when left for an indefinite period.

Convenient in shape; no holders needed.

Packed in dustproof cardboard tubes; and shipped in sealed cartons.

Nested together and dispensed in inverted fashion; inside untouched by hands.

THE VORTEX MFG. CO., 421-431 North Western Avenue, Chicago

New York Trade Jottings

The Arkell Safety Bag Company, 67 North 11th street, Brooklyn, has filed notice with the Secretary of State at Albany, N. Y., of an increase in its capital to \$800,000.

* * *

S. W. Dunning, 132 Nassau street, New York city, who has represented in New York city the Schmidt & Ault Paper Company since 1910, advises that the agency will be discontinued June 6

* * *

A petition in bankruptcy was filed last week against the R. & C. Paper Box Corporation of 80 Greene Street by these creditors: Louis Schulman Company, \$228; Paper, Twine & Board Company, \$604; Charles W. Rider & Co., Inc., \$40.

* * *

The offices of the American Paper and Pulp Association, 18 E. 41st Street, together with many other paper houses throughout the city, were closed from Saturday, May 27, to Wednesday, May 31, over Decoration Day

* * *

The Irving National Bank, New York, has been appointed depository under a creditor's protective plan and agreement for receipt of bonds and creditor's claims of the Cushnoc Paper Company and the Kennebec Paper Company, both of Augusta, Maine.

* * *

A. W. Kimball, of 60 Edward Street, East Haven, Connecticut, Superintendent of the Rose Lithographic Corporation mill at White Hall, Baltimore County, Md., was among the New York trade visitors during the first part of this week. The mill has been closed down temporarily due to unfavorable economic conditions.

* * *

The American Woodpulp Corporation having recently announced that it has absorbed J. J. Patricof Company, Inc., now desires to confirm this announcement. The statement says, "Neither of the above mentioned concerns, however, will hereafter be responsible for any obligations incurred by Jacob J. Patricof, who is no longer in the employ of either firm, or connected with them in any capacity."

* * *

Judge Mack last week appointed Ernest Angell receiver for the Kolb Carton Company, Inc., manufacturer of cartons, of 474 West Broadway, under bond of \$100. The petition in bankruptcy was filed against the company by the following creditors: Lee Siegel, \$242; Angel Paper Mill Supply Company, \$369; Harry G. Jones Company, Inc., \$6,651. The corporation operates mills at Thamesville, Conn., its liabilities being listed at about \$250,000 and its assets \$50,000

Bagley & Sewell May Make Screens

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., May 29, 1922.—The manufacture of rotary tremor screens for papermaking machines may be added to the business of the Bagley & Sewell Company of this city. Announcement of a decision on that point has not as yet been made, but John Paramor, managing director of the Watford Engineering Works, Ltd., of Watford, England, was in the city last week and held a conference with Bagley & Sewell officials relative to the proposition.

Mr. Paramor is in this country and Canada in an effort to locate branch agencies for the manufacture of the English patent rotary screen. The local plant is one of the largest paper machine and paper mill machinery manufacturing plants in the country. It now makes flat screens, but it is said that the rotary type of screen is an improvement over the flat type and is being installed in many mills, especially in Europe.

While in the city Mr. Paramor was entertained by members of

the Lansing family. He left Friday for Canada and expected to sail for home on June 6. The most that could be obtained on the question of the success of the local conference was a statement by Mr. Paramor that he had made a thorough inspection of the local plant and that the proposition to manufacture rotary screens here was under advisement.

The Watford Engineering Works, Ltd., manufacture rotary screens, revolving screen drums, strainers and strainer plates, brass and iron foundries, diaphragmless strainers and the Watford pulper

Oppose Duty On Casein

As a result of the recent developments in the tariff situation, the Senate having passed on the bill to take casein off the free list and impose a duty of four cents a pound, book paper manufacturers held a special meeting last Monday in the offices of the Oxford Paper Company, 200 Fifth avenue. The purpose of the meeting was to get under way a movement to oppose the tariff bill and advocate free casein.

Martin Cantine, of the Martin Cantine Company was appointed chairman of the committee which was named to carry on this work and present the book paper manufacturers' side of the matter to the Senate Tariff Committee. Another meeting was held Wednesday, May 31, at which plans and further developments were discussed.

In their fight for free casein, manufacturers will work as an organized whole throughout the country. A further meeting of mill owners, constituted chiefly of those making book paper, is planned as an adjunct to the joint meeting of the Superintendents and Cost Association Convention at Kalamazoo this week.

Paper Men Show Lines at Candy Exhibit

CHICAGO, May 29, 1922.—The drive which the paper box and cover paper manufacturers and jobbers have been making for business was demonstrated during the past week when the biggest candy convention ever held convened in Chicago. During the week a large number of paper box and paper specialties houses showed their lines in booths at the Coliseum.

Among those showing at the Coliseum were, the Bedix Paper Company, of New York, showing a very attractive line of specialties for the candy and box trade: The A. M. Collins Company, of Philadelphia; The Container Club, of Chicago; The Milwaukee Paper Box Company; the F. J. Schleicher Paper Box Company, of St. Louis; The W. C. Ritchie & Co., Chicago, and H. Schultz & Co., of Chicago.

The Continental Paper and Bag Mills, 346 North Ada street, Chicago, had a very comprehensive showing of the various paper products this company produces, not alone for the candy trade but for others as well.

Hammond Paper & Bag Co. Formed

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., May 29, 1922.—Merritt J. Davis, secretary and treasurer of the Watertown Stone Products Company, Inc. has sold out his interests in the company to members of the concern and is leaving the city permanently. He has become interested in the papermaking business with T. H. Hammond, formerly superintendent of Taggart Brothers Company, who is now in Wellsburg, W. Va.

When Mr. Hammond moved to Wellsburg several weeks ago he did not announce his future plans. Report comes now that he has organized the Hammond Paper and Bag Company of Wellsburg and is getting ready to start a plant. At the present time it is said he is engaged in financing the proposition and that Mr. Davis is assisting him in the work and will be a part of the company after it gets into operation.



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PROGRAM FOR COST ASSOCIATION CONVENTION

The following is the official program of the seventh semi-annual convention of the Cost Association of the Paper Industry to be held at the Community House of the Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich., June 1-3:

THURSDAY, JUNE 1, 1922.

9:00 A. M.—REGISTRATION:

Cost Association—Park American Hotel, Kalamazoo, Mich.
Superintendents' Association—New Burdick Hotel, Kalamazoo, Mich.

MORNING SESSION

COMMUNITY HOUSE—KALAMAZOO VEGETABLE PARCHMENT CO.

10:00 A. M.—

1. Address by President Bush.
2. Report by secretary-treasurer.
3. Report of Committee on Beater Furnish: Technical Association. Chairman, J. C. Sanburn, Strathmore Paper Company. Cost Association. Chairman, H. F. Miller, American Writing Paper Co.
4. Report of Committee on Depreciation: Chairman, E. S. Catlin, R. B. Wolf Company.
5. Appointment of Group Cost Committees. The Cost Association recently suggested the appointment of cost committees in each group of manufacturers and has been requested by the secretary-treasurer of the Writing, Book, Cover and Tissue Associations and the Toilet Paper Converters' Association to appoint such committees, to consist of three reliable cost men in each group.

The work to be done by these committees is important and it is hoped that very careful consideration will be given to this matter by those attending, thereby securing the appointment of the most reliable men.

AFTERNOON JOINT SESSION WITH AMERICAN PULP AND PAPER MILL SUPERINTENDENTS' ASSOCIATION

COMMUNITY HOUSE—KALAMAZOO VEGETABLE PARCHMENT CO.

1:00 P. M.—

Address of Welcome—J. Kindleberger, president and general manager Kalamazoo Vegetable Parchment Company.

"Association Activities in the Paper Industry," Dr. Hugh P. Baker, executive secretary American Paper and Pulp Association.

"An Executive's Viewpoint on the Subject of Co-operation Between Superintendents and Cost Departments," George A. Galliver, president American Writing Paper Company.

"How Cost Systems Help Superintendents," C. Oliver Wellington, C. P. A., Scovell, Wellington & Co. (15 minutes will be allowed at close of address for those who wish to question speaker.)

"Cost Accounting as Relating to the Superintendents," F. M. Hodge, president Kalamazoo Paper Company.

6:45 P. M.—

Banquet, Community House—Kalamazoo Vegetable Parchment Company.

FRIDAY, JUNE 2, 1922

MORNING SESSION—COMMUNITY HOUSE—KALAMAZOO VEGETABLE PARCHMENT COMPANY

10:00 A. M.—

"A Simple Cost System for One or Two-Machine Mills." Paul Koenig, cost accountant Marinette & Menominee Paper company.

GENERAL DISCUSSION REGARDING:

1. Cost association's future activities.
2. Initiation of campaign for new memberships.

3. Work of Local Divisions & Group Cost Committees.

4. Executives and Cost Departments.

AFTERNOON JOINT SESSION WITH AMERICAN PULP AND PAPER MILL SUPERINTENDENTS' ASSOCIATION

COMMUNITY HOUSE—KALAMAZOO VEGETABLE PARCHMENT CO.

1:00 P. M.—

1. Short addresses by: Felix Pagenstacher, president Bryant Paper Company; Fred Sutherland, Sutherland Paper Company; A. B. Thomas, general manager Eddy Paper Company.

"Co-operation Between Superintendents and Cost Accountants," J. H. Slater, general manager Escanaba Pulp and Paper Company.

"How Superintendents Are Benefited by Cost Reports Based On Accurate Manufacturing Data," J. A. Reilly, manager cost and inventory department American Writing Paper Company.

"Mill Costs from a Technical Man's Standpoint," W. G. MacNaughton, secretary-treasurer T. A. P. P. I.

Other speakers will be C. A. Jaspersen, secretary Nekoosa-Edwards Paper Company; Fred C. Boyce, Wausau Paper Mills Company; E. G. Clerke, comptroller the Richardson Company, and Ed. Coughlin, Allied Paper Mills.

6:45 P. M.—

DINNER-ENTERTAINMENT

SATURDAY, JUNE 3, 1922

Arrangements have been made whereby those wishing to do so may visit the various mills in the Kalamazoo district. All those wishing to make such visits should give their names to the Secretary-Treasurer, T. J. Burke, as soon as possible after their arrival.

Conditions Improving in Chicago

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, May 29, 1922.—Looking back over the month the trade here feels that it was a fair one. It is said by some to have fallen below the volume of March, but that unlike April, indications are much improved.

June is being looked forward to with hopes, but it is not the consensus that any great advancement will be made in a business way during the first month of summer.

The paper industry here has pointed to the approaching fall season as one in which a demand for paper will be strongly in evidence. Business conditions in general have been taken into consideration and these are said by the trade to be showing improvement. Mail order houses are expected to start campaigning for business late this summer.

Advertising of all kinds is expected to improve with the passing of the summer months.

Price of Brass Fourdrinier Wires

The Armstrong Bureau of Related Industries for its clients, the manufacturers of paper machine wires, furnishes for publication the following prevailing market price information on brass Fourdrinier wires (new standard) as last quoted to the trade by the respective sellers and cleared through the Bureau:

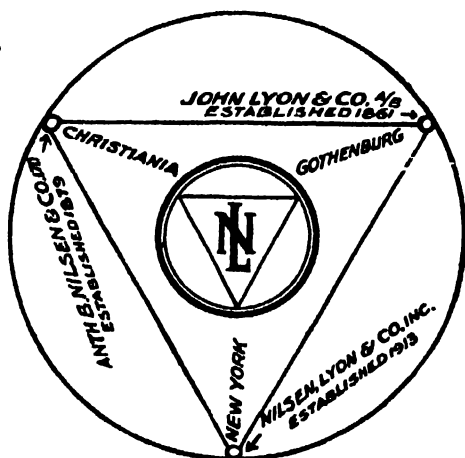
	Price in Cents Per Sq. Ft.
No. 60 mesh	50-51 cents
No. 65 mesh	52-53 "
No. 70 mesh	56-57 "
No. 75 mesh	61-62 "
No. 80 mesh	61-72 "

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CHEMICAL PULPS**

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NEW YORK

PAPER

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OSKARSTRÖM

Easy Bleaching Sulphite

"TT"	- - - - -	PRIME
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"X"	- - - - -	2nd QUALITY

Stocks Carried at Baltimore, Philadelphia and Boston.

For Samples and Prices, Address

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CUT down excessive wrapping paper investment. Why carry two wrapping paper lines for one wrapping paper purpose?

MOSINEE

presents a perfect wrapping paper, weight and strength for each wrapping purpose. Made in all weights, from 15 lb. to 100 lbs. basis. The one complete, standardized and economical line of wrapping paper sold.

MOSINEE KRAFT

"The Wrapper That Delivers the Goods"

ADPAX

PAPER

*"It more than Wraps—
It Advertises"*

IN APOLOGY TO SOME, AND IN CONSIDERATION OF OTHERS

The advertising of our AdPax Line has been criticised and possibly justly so, for to the many who have written us we were compelled to reply that we were not prepared to give out any information. We are sorry.

Up to date, we have not attempted to draw inquiries but rather to let the trade know that we had a new line in process of preparation. Much time has also been devoted to investigation so that it would be easier to decide upon those we would be glad to have cooperate with us later on.

In early announcements we intend telling of the fields we purpose to cover and their scope and possibilities.

FRED C. STRYPE
320 Broadway, New York

Clay

300 Tons daily

M-E clay has the lowest average grit and moisture content of *any* clay, be it domestic or foreign.

AMERICAN MADE
FOR AMERICAN TRADE

THE MINER EDGAR
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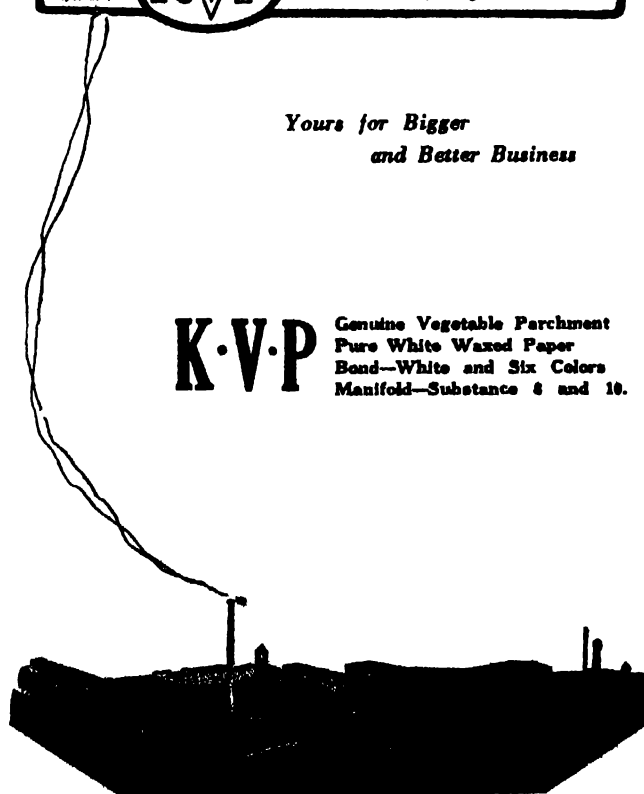
110 William Street
New York



*Yours for Bigger
and Better Business*

K.V.P

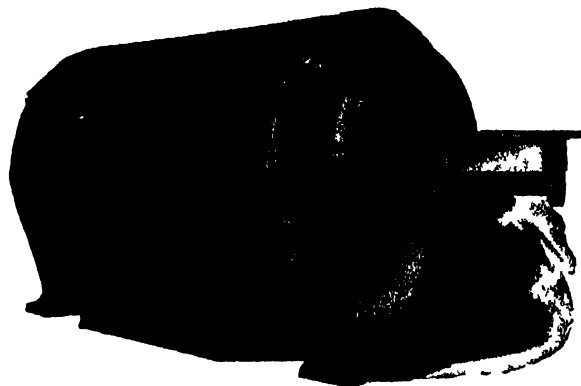
Genuine Vegetable Parchment
Pure White Waxed Paper
Bond—White and Six Colors
Manifold—Substance 8 and 10.



"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low
Power
and
Upkeep Expense



Delivers
Rejections Free
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Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING

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IMPROVED PAPER MACHINERY CO.

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SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

WHALEN SULPHITE PULPS

Made from the SITKA SPRUCE of BRITISH COLUMBIA

Noted for Fibre, Color and Strength

**SNOWHITE
BLEACHED
SULPHITE**

**GLACIER
EASY BLEACHING
SULPHITE**

**SWAN
STRONG
SULPHITE**

As exclusive Sales Agents for all of the products of the WHALEN PULP & PAPER MILLS, LTD., in addition to stocks at the mills, we will carry large stocks of the above well-known brands in New York, thus insuring prompt deliveries.

Your inquiries addressed to any of our offices will bring prompt quotations by wire.

CANADIAN ROBERT DOLLAR CO., Limited
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Hankow, Tientsin,
Ichang, Chungking, and
Pekin, China; Kobe,
Japan; Calcutta, India;
Manila, P. I.; Singapore,
S. S.

Editorial

Vol. LXXIV New York, June 1, 1922 No. 22
FIFTIETH YEAR

The Need For Enterprise

In spite of the manifold signs of returning prosperity—of a rehabilitation of broken business as a result of the period of recession which industry in general is suffering, it is very difficult indeed for manufacturers and merchants in the paper industry to smile and believe that conditions will again attain a pre-war normalcy within a few weeks' time. Furthermore, it is next to foolhardy to labor under the delusion that any such immediate metamorphosis will actually take place.

Many mill owners and paper dealers have experienced for the first time in their business careers, a genuine period of price recession, weak demand and increasingly greater competition. On a graph of wholesale prices from 1810 to 1920, it is very interesting to note that during the last century there have been just three periods of this type. During the years 1812-13, 1863-64 and 1920-21, prices attained a peak that averaged 150 per cent higher than the average for the intervening years.

Those men who were in the paper industry prior to 1898 will remember the effects of the tail end of the downward swoop of wholesale prices which resulted from the Civil War. To them, the present situation is more easily understood. The PAPER TRADE JOURNAL was inaugurated shortly after the close of the Civil War and has the benefit of the experience gained through nearly thirty years of price recession. Editorials in the year 1898 pointed out that wholesale prices were at the lowest ebb, during that year, they had ever reached in the history of our country.

From that time until late in 1920, however, the curve climbed upwards in leaps and bounds, and it is the experience of this period that men in the paper business today have accepted as a criterion. Due to the extreme complexity of modern civilization and the infinitely greater magnitude of the late war, as compared to the war of 1812 and the Civil War, it is safe to assume that the era of price reconstruction which has just commenced will be even longer than the two preceding ones, and more difficult to overcome.

This fact, however, certainly affords no reason why American business should not prosper. The era immediately following the Civil War and continuing until the twentieth century was characterized by such industrial progress as the United States had never known. The country developed in every direction and fortunes were made in innumerable lines of business despite the steady recession of prices. But one thing is sure—these fortunes were not made under the same circumstances as those which were accumulated in the early years of the recent World War. The demand for products had to be created in the earlier era and the mechanism of every business that survived had to be thoroughly oiled and in sound running order.

This status is approaching in present day affairs. Factory costs must be cut down to the lowest possible notch. Business must be financed soundly, and, most important of all, the effort of every individual in the paper industry must not lag. Selling campaigns

must be conducted on an intensive basis, and when every manufacturer, jobber, packer and merchant puts on an extra pound of steam and really hustles for business, he will find it is still there.

Foreign Trade Recommendations

The recovery of prosperity in the United States depends upon the ability of our people to sell at remunerative prices practically all they produce, running approximately full time and full-handed, was the keynote of the "final declaration" of the Ninth National Foreign Trade Convention at Philadelphia, recently.

Our productive capacity is substantially greater than the normal requirements of the domestic market. It is evident, therefore, that sustained prosperity for this country depends upon sustained foreign trade; and because in so many lines of production profit depends upon prices that are determined in international markets, our interest in foreign trade is far greater than the mere proportion which it bears to our total commerce.

Despite the improvement wrought in the last year in many markets, the world's purchasing power continues impaired, and exchanges remain unbalanced. Europe's lingering recovery retards the restoration of normal conditions elsewhere. It is now evident, however, that the competitive advantage derived from extreme inflation by some European countries, notably Germany, is rapidly lessening as their production costs rise through wage increases and through increased costs of imported raw materials.

With extensive unemployment, this country never stood more in need of foreign trade. Unemployment will not be reduced to its minimum until our export trade absorbs the last ten or twenty per cent of normal production. The country has passed from a debtor to a creditor position. The volume of American foreign trade today is less, however, than would have resulted from maintenance of the average rate of growth of the decade before the war. The value and distribution of our overseas commerce today is entirely inadequate for the service of foreign indebtedness to us and for the employment of the American Merchant Marine.

It must be recognized that the payment of foreign balances due the United States can be accomplished only in the degree that we are willing to accept goods and services. This by no means implies that the liquidation must be in competitive merchandise—on the contrary, it may take the form of non-competitive imports, irrespective of their origin.

The absorption of imports to the full value of the balances annually due us is dependent upon a fuller operation of our industries, including agriculture, and this in turn depends in part upon greater export trade. The most notable development in our foreign trade during the last year has been the importation of securities representing either American investment abroad or the funding of the excess value of our exports.

The needs of other countries, especially in Europe, for long term credits afford opportunity for the employment of American investment funds in ways that will be beneficial to both borrowers and lenders.

The conditions confronting our foreign trade today demand increased effort to expand our commerce against increasing competition. This is no time to relax effort just when foreign markets are recovering their ability to consume and our foreign competitors are

increasing their ability to produce and their selling activity in all fields. Our foreign trade has suffered in the past through lack of persistent effort to hold and develop fields in which a footing has been gained. This is the time above all for activity, courage and persistence.

It is peculiarly essential to remember that it will cost much more to regain in the future a business, lost now through lack of courage and tenacity.

The National Foreign Trade Council urges as a national program the following special features during the coming years as being likely to aid materially in hastening the return of domestic prosperity:

1—An expanded foreign trade to insure the prosperity of the United States.

2—Sale of Foreign securities to American investors; and the handling such foreign loans in such a manner as to stimulate American exports.

3—Development of a trans-shipment trade through the creation of foreign trade zones.

4—Creation of debenture-issuing corporations under the Edge Act to extend long term credits; and the financing of such corporations through the return to Member Banks of the Federal Reserve System of the subscription of three per cent of their capital required to capitalize originally the Federal Reserve Banks—such refunding to be conditional on the reinvestment of these funds in the stock of corporations organized under the Edge Act.

5—Elimination of the excessively high income surtax rates.

6—Active support of the American Merchant Marine by American shippers and travellers; and the development of a governmental tax policy which will permit of depreciation charges sufficient to reduce the capital investment in shipping to present market values.

7—Enactment by the various States of marine insurance laws in conformity with the model law recently enacted by Congress for the District of Columbia.

8—Further development of simplified and standardized documents of foreign trade.

9—Tax exemption of the foreign income of Americans resident abroad.

10—Bargaining tariff sufficiently flexible to prevent discrimination against American exports and imports.

11—Increased efforts to educate Americans in all parts of the United States to the importance of foreign trade to every man, woman and child.

12—Activity, courage and persistence at the present time in order to expand American foreign trade.

Charleston Paper Co. Buys Old Nitro Plant

CHARLESTON, W. Va., May 29, 1922.—The Charleston Paper Manufacturing Company has announced the purchase of 9¼ acres at Nitro, the former government ordnance plant. The property includes a power plant. By the time the plant is completed, probably in September, it will have cost \$400,000, according to the announcement.

Plans have been laid to start with a force of 100 men. The factory will produce a heavy grade of wrapping paper.

Charles G. Hartje, of Stubenville, Ohio, is president of the concern; W. H. Kimberland, of Pittsburgh, vice-president, and R. C. Stewart, Toronto, Ohio, secretary-treasurer.

Paper Mill Employment and Wages

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1922.—The Bureau of Labor Statistics, Department of Labor, has issued figures showing the employment and wages paid in 60 paper mills for the months of April, 1921, and April, 1922.

In these mills there were 25,251 persons employed in April, 1921, as compared with 24,655 employed in the same mills in April of this year, which is a decrease of 2.3 per cent. The payrolls also showed a decrease from \$632,394 paid to employees in April, 1921, as compared with \$567,996 paid in April of this year, a decrease of 10.2 per cent.

The bureau also shows a comparison between the employment and wages paid in 58 mills during the months of March and April of this year. In March there were 25,732 persons employed in these paper mills as compared with 24,287 in April, a decrease of 5.6 per cent. The payrolls also decreased from \$602,922 paid in March to \$559,328 in April, a decrease of 7.2 per cent.

Regarding changes in wage rates and per capita earnings in the paper industry during the period of March 15 to April 15, 1922, the bureau says:

"Two plants reported a decrease in wage rates of 10 per cent, affecting all employees in the first plant and 97 per cent of the employees in the second plant. In one establishment a decrease of 5 per cent was made in the wages of 4.8 per cent of the force. Slackness was reported for this industry and the per capita earnings showed a decrease of 1.7 per cent when March and April figures were compared."

Spanish River Mills To Use Hydro Plane

DAYTON, Ohio, May 27, 1922.—The Dayton-Wright Company has shipped a large hydroplane for use by the Spanish River Pulp and Paper Mills, Ltd., in connection with a very interesting surveying project. The power plant of the machine consists of two Liberty motors, and will carry six persons. Under Canadian laws, it will be necessary to employ a Canadian pilot. He has already been selected in the person of a member of the old flying squadron in France.

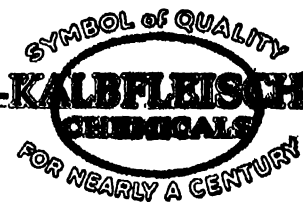
The company's timber preserves cover 12,000,000 acres lying between the territory adjacent to Sault Ste. Marie and the Hudson bay. It is necessary in modern operations to have concrete information as to the state of the timber, the topography, location of streams, watershed, etc. In the old days this was done with timber cruisers. Under that method, a survey of the 12,000,000 acres would have cost \$1,000,000. The aerial survey will involve a modern and expert photographic service. The entire territory will be photographed by piecemeal. It will require about one year to do the work.

Trips have been made from the Soo to the Hudson bay by canoe and portage. It required six weeks' time. The hydroplane now brought into service will fly from the Soo to Moose Station on Hudson bay in three hours. The machine was taken down and shipped in parts. This is a marked departure in exploratory work and will be viewed with great interest, not only in this country, but elsewhere. The machine was not purchased outright. The Dayton-Wright Company will be paid by the square-mile unit.

George H. Mead of Dayton, prominent in the affairs of the Spanish River Pulp and Paper Mills, conducted the negotiations.

Kimberly-Clark Co. Orders More Text Books

The Kimberly-Clark Company has just placed orders, through the Technical Association of the Pulp and Paper Industry for ten more copies of the third volume of the text books. Advance orders for Volumes IV and V have likewise been placed, although the date of publication is not yet definitely known.

**Exclusive****Manufacturers***Ryan-Seaman Process*

DRY SATIN WHITE

The Latest Development in The Coated Paper Industry

Casein
Crystal Boro Phosphate
 (A solvent for casein)

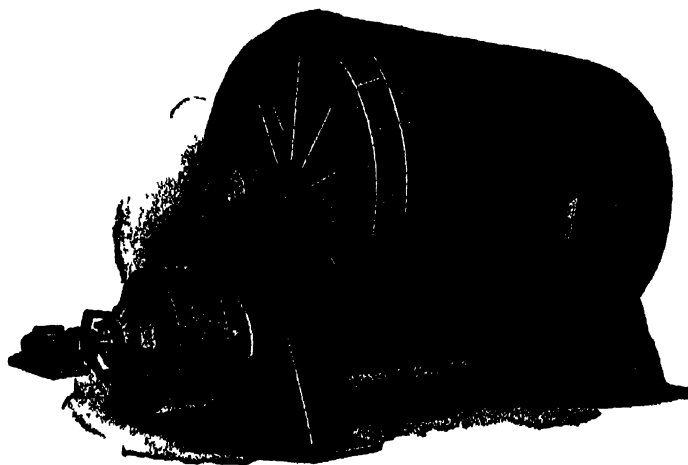
ALUM
 Both Commercial and Iron Free
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TRENTON, N. J.

Section of the Technical Association of the Pulp and Paper Industry



AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by W.G. Mac NAUGHTON, Secretary

WASTE IN THE PULP AND PAPER INDUSTRY

The study made by the Federated American Engineering Societies of what is known as the Hoover Committee, in its report, "Waste in Industry," has stimulated the Technical Association of the Pulp and Paper Industry to undertake the investigation of one phase that has a wider interest than the industry itself. The phase to be studied is the loss of materials or the lack of their proper utilization. The loss of material, whether fiber or chemicals, is largely through being carried away in the mill effluent and the bearing of the study on stream pollution should insure the broadest support not only of the paper companies concerned, but also the state and federal bodies. This support is being evidenced by the promise of active co-operation by the Forest Survey and the Forest Products Laboratory through Earle H. Clapp, Assistant Forester of the Washington staff.

Robert B. Wolf Chairman

The chairmanship of the committee having been accepted by Robert B. Wolf, who acted on the Hoover Committee and is one of the prominent mill engineers, insures its activity, and the vice chairmanship having been taken by George D. Bearce, engineer of the News Print Service Bureau, is a guarantee of the active interest of the chief users of wood as a raw material and the largest group of manufacturers. The study, it is announced, will start with the materials at the plants in their raw state, and will follow them through the mill to the finished product. Since wood is the chief raw material used the largest place will undoubtedly be held by wood and wood pulp although others will be dealt with. The waste of wood as such may be defined as the decrease in value through deterioration during storage and its destruction by fire and decay on account of ineffective means of prevention.

Wood Preparation

In preparation for the pulp mill, waste may be due to inefficient methods of bark removal by which material designed for pulp is either disposed of as an absolute waste or applied to a lower use, as for fuel. Waste would also include the disposal of bark otherwise than for fuel purposes, provided its value as fuel could be shown to be greater than the cost. There may also be the production of an unnecessary amount of sawdust or material unsuitable for pulp manufacture.

Mechanical Pulp Mill

Probably the outstanding instance of waste is the coarse material removed in screening the pulp where it is not utilized but otherwise disposed of, usually through the mill effluent, while

another is the considerable percentage of usable pulp that is carried away by the same means, through inefficient methods of fiber recovery.

Another waste of which little definite is known, is the undoubted loss of power through inefficient regulation of the factors involved

Sulphite Pulp Mills

In this class of chemical pulp mills probably the outstanding sources of material waste are the losses of sulphur through inadequate plant control, and the loss of fiber in the mill effluent. A waste which has long been studied and which is still unsolved for the industry at large, is the spent liquors of digestion. The methods of digestion may be responsible for the production of an excessive quantity of screenings containing incompletely digested wood as well as the knots.

Soda and Sulphate Pulp Mills

Apart from the fiber carried away, which is common to nearly all pulp and paper mills, the chief wastes probably lie in the unwarranted loss of chemicals due to the apparatus used and inefficient methods of recovery.

Paper Mill

The chief avenue of waste both of fiber and chemicals is through the mill effluent. The waste of fuel may be either in the steam plant itself or in any of the mills to which the steam produced is distributed for process work or for heating. In chemical pulp mills the loss of heat is almost complete. In a sulphite mill the heat produced in burning sulphur is a definite amount compared with an equal weight of coal. In discharging the contents of the digesters of chemical pulp mills some attempt has been made to recover the discharged heat. In the case of paper mills it is recognized that the application of heat in the drying operation is extremely wasteful and measures have been applied in a few cases towards heat recovery. One of the chief causes of the waste of heat, especially in the more northern sections of the country, is the poor insulation of the buildings.

To Include Ablest Engineers

In selecting the personnel of the committee R. B. Wolf and G. D. Bearce plan to include in it the ablest plant engineers in the industry and the selection is now being made. They are inviting co-operation by executives in rendering assistance toward the study of the problems which are vital to the advancement of the industry.

USE OF CONTINUOUS CENTRIFUGAL IN THE SODA PULP MILL

By J R KESSLER AND G. N. COLLINS

In the washing of soda pulp, as it comes from the digesters, it is desired to remove the black liquor from the pulp as soon as possible in order to decrease the bleach consumption, and with as little dilution as possible in order to have a low steam consumption in evaporating the black liquor for the recovery system. In collaboration with G H Elmore, a number of experimental runs were made to determine the feasibility of using a centrifugal for this purpose.

Elmore Continuous Centrifugal Used

The machine used was a 10-inch Elmore Continuous Centrifugal, with an inverted rotary basket. The material to be separated was fed in the top and passed to the inside of the basket. The liquor was thrown through the basket, which was lined with slotted plates similar to a pulp screen, and passed out a drain in the side of the machine. The pulp passed down the inside of the basket to openings in the base of the machine.

For operation on a plant scale, it was the intention to use a centrifugal with a basket 36 inches in diameter. It was deemed advisable to experiment first with a 10-inch machine,



36 INCH CONTINUOUS CENTRIFUGAL MACHINE

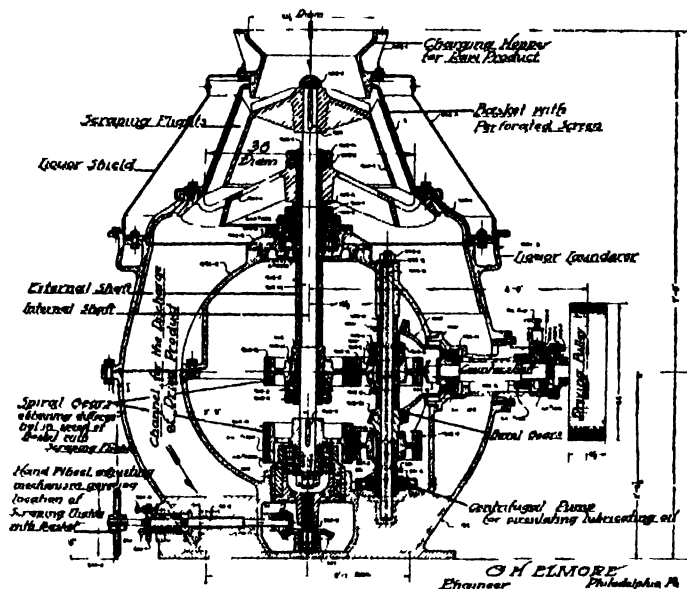
in order to demonstrate that a centrifugal of this nature would work with soda pulp as it comes from the blow dome; and to predetermine, if possible, any changes that might be advantageous in a 36-inch machine.

The 10-inch machine was set on a split concrete foundation giving a space for the accumulation of the pulp discharged through the base of the machine. The liquor outlets in the sides of the machine were arranged to discharge to either of

two barrels. The soda pulp taken out of a wash pan immediately after a blow, was fed to the machine from buckets. It was found impossible to flow this stuff through an 8-inch pipe at a low enough speed not to flood the 10-inch machine.

Series of Runs First Made

A series of runs was first made using varying speeds to



CROSS SECTION OF MACHINE

determine the most economical point at which to run the machine. The machine is designed to operate at 3,000 r p m. The first run was made at 2,550 r p m, and others at varying speeds down to 1,620 as shown in Table 1, following.

Run No	Basket Speed, r p m	Stock		Per Cent Moisture	Per Cent Caustic on Air Dry Stock	Liquor °Be at 100° F.	Per Cent Fiber Lost on Air Dry Stock	Remarks
		Kind	Moisture					
1	2550	Pine	Partly diluted	57.5	1.6		0.28	Shown the knotty character of pulp
2	1986	Pine	Partly diluted	57.1	1.68		0.28	Stock diluted in an effort to feed it through a pine
3	1986	Pine	Largely diluted	65.7	0.5	1.0	2.4	
4	1826	Poplar	7.9% Dry	57.45	2.0	8.2	0.10	
5	1950	Poplar	9.0% Dry	55.7	2.4	11.9	0.20	
6	1620	Poplar	11.0% Dry	59.4	2.16	11.5	0.28	

The column designated as "Per Cent Caustic Soda on Air Dry Stock" refers to the titrable alkalinity using Phenolphthalein as indicator.

The "Per Cent Fiber Lost" or waste pulp, appears to vary directly with the moisture content of the stock run. The loss could be reduced by the use of finer screen plates.

The moisture content of the resulting pulp appears to be fairly constant above 1,950 r p m. Below this speed the elimination is less complete. The caustic soda and sodium carbonate remaining in the pulp is less at the higher speeds. At the higher speed a distinct knotting or balling of the fiber presented an objectionable feature. This was attributed to the action of the scraping flights, which are inclined blades

moving inside the basket and set a small distance from it. These blades or flights are mounted on a central shaft, rotating in the same direction as the basket, only one revolution in a hundred slower, so that the resulting motion is opposite in direction to that of the basket. It is believed this objection would be eliminated in a larger machine as G. H. Elmore claims better operation with larger machines invariably results.

In running these tests different speeds were obtained by changing pulleys; this meant that some time elapsed between the successive tests and consequently different materials were used for the different runs. This would allow a difference in the original moisture content and freeness which would influence the moisture content of the product coming from the machine.

Some of the Possibilities

When using a larger machine, it is possible to give the pulp a washing in the machine by introducing water part way down the basket. To secure some idea of the possibilities of using the Elmore with washing, a few runs were made on pulp washing the first product with cold water, also with hot water, and in a third case two washings with hot water were used.

TABLE 2

No.	R. p. m.	Stock	Washing Temp.	Gal. lb. Air Dry	Per Cent Moisture	Per Cent Caustic on Air Dry Stock	Liquor % Be. at 100° F.
4	1896	Poplar	1st 40°F.	1.8	57.45	2.0	8.7
			.....		66.4	0.2	0.2
5	1950	Poplar	1st 40°	1.2	55.7	2.4	11.9
			2d 150°	2.3	62.2	0.32	4.8
			.....		63.7	0.08	0.05
6	1620	Poplar	1st 150°	1.2	59.4	2.16	11.5
			2d 150°	1.0	66.0	0.4	0.7
			.....		67.0	0.08	
7	1950	Poplar	1st 160°	.25	56.3	1.64	11.9
			2d 150°	1.13	62.0	1.12	2
			.....		64.0	0.2	0.4
8	1950	Poplar	1st 150°	.25	55.5	1.24	10.8
			2d 150°	1.60	59.5	0.6	4.8
			3d 150°	2.14	62.	0.6	0.0
			.....		63.	0.08	0.1
			.....			.12	

The water used was in no case excessive as compared with wash pan practice, but unfortunately even the two washings with hot water did not give a pulp sufficiently free of black liquor to be bleached at nearly as low a figure as the pulp from wash pans.

The pulp in the regular system was screened, run through a wet machine and bleached. This was an additional treatment which the stock from the centrifugal did not receive.

It must be borne in mind while considering these tests that they were run not with the idea of publication, but purely for our own use in determining whether we should proceed with the installation of a 36-inch machine.

This machine still remains excellent in theory as it provides the speediest method yet suggested of ridding the pulp of black liquor as it will take the pulp as fast as it comes from the blow and throw out the liquor.

Several Things to Be Considered

In practice, several things must be considered. Due to the difficulty of stopping a blow in the middle and holding stuff in a digester, and the possibility that something might go wrong with the centrifugal, it would be necessary to have a storage tank paralleled with the discharge to the centrifugal or a spare centrifugal could be installed as a stand-by machine in case of trouble. Small pieces of tramp iron such as nuts, bolts, nails, etc., are frequently found in the pulp. Some method for their elimination must be provided as they would probably damage the centrifugal by punching holes in the screen or bending the scraping flights. A magnetic separator could be used for this purpose. In feeding the pulp to the centrifugal, some sort of feeding control as an Adamson Rotary Feeder may be necessary to assure uniform flow. We had considered this necessary in our plans for a 36-inch installation.

The dried pulp coming from the centrifugal would be mixed with water for screening or further washing before being bleached.

Following these tests an experimental run was made on black ash grout as it came from the diffusers. The moisture content was reduced from 88 per cent to 76.6 per cent, when operating at 1950 r. p. m. This could no doubt be bettered with higher speeds and a 36 inch machine.

Further experiments, with this machine, would no doubt prove interesting and there is a large possibility that they would be especially profitable to anyone contemplating the construction of a new mill.

COMPUTING THE PULP FURNISH

In computing the quantity of pulp used in the paper mill, the variable factor is the moisture content. Throughout all the different forms in which pulp is found the moisture content varies from as low a figure as 5 per cent to one as high as 97 per cent. The greater the percentage of water the greater is the influence of a variation on the percentage of dry content. There are a number of factors to be considered in making moisture tests and the computations some of which are peculiar to certain forms of pulp and the conditions of storage.

In the case of pulp taken from wet machines and going directly into the manufacture of paper when the official method of sampling is used, the wet weight together with the moisture test should be dependable.

Rolls and Bales of Dried Pulp

The weight and test on receipt should be used provided that storage conditions are suitable.

Hydraulic Pressed Pulp

If used from storage, the variation of the moisture test from that shown on receipt will depend on conditions of storage. Accuracy of the weight will depend on the method of sampling, whereby the average of the lot is secured for a test.

Moist Laps on Sheets

When used from storage the change in moisture test from the date of receipt will depend on the factors involved in the storage conditions. Here as in the previous section the accuracy of the dry weight will depend primarily on the method of sampling to secure a fair average. The factors to be considered are the storage place whether in the open or protected, the climatic conditions during storage and the height of the pile and the length of time in storage. When pulp is piled in a warehouse for a given length of time and to a given height, an equilibrium will doubtless be reached as to the weight of dry pulp per cubic foot depending on the height piled above and the time of piling.

Drainer Pulp

The factors governing the moisture content of this form are practically the same as described in the former section. In a similar way it is probably possible to establish a factor of moisture content depending on the character of material, the depth of the mass and the time of drainage.

Slush Pulp

In this the recognized methods for determining the consistency must be employed.

A DICTIONARY OF PAPER TERMS

Industrial development is always associated with lengthening vocabularies and extending definitions. That position has been reached by the paper industry, which is rich with words and phrases of special application redolent of days before the art became an industry. The compilers of this glossary wish to help the student, young employee and layman in any work which requires a knowledge of the values of words devised to particular uses in pulp and paper mills, and to preserve, so far as possible, the interesting historical sentiment attached to the earlier words.

It is proposed after simultaneous publication in *The Pulp and Paper Magazine of Canada* and the *PAPER TRADE JOURNAL* and the receipt of constructive—or other—criticisms and additions, to incorporate the work in Volume 5 of the series of text books prepared by the Joint Executive on Vocational Education. Early comments will therefore be welcomed. Acknowledgment is hereby given to friends who have suggested words, and to "The Condensed Chemical Dictionary" (Chemical Catalog Company). "A Technological and Scientific Dictionary" (Goodchild & Tweney). The glossaries given in Sindall's, "Elementary Manual of Paper Technology." Dawe, "Paper and Its Uses." Kress, Wells & Edwardes, "American Pulpwoods." Bromley, "Paper and Its Constituents."

A

"A" Frame. A triangular frame with a cross bar for supporting machinery, etc.

Aberration. (1) Chromatic. The formation of a margin of several colors, owing to the splitting up of light rays on curved surfaces. (2) Spherical. The effect produced by reflecting light rays from a circular surface. These reflected rays are at different points in any plane of vision.

Abies. A group of coniferous trees, including spruce, larch, fir, etc.

Abietic Acid. The chief constituent of rosin ($C_{10}H_{16}O_2$). Its neutralization results in the formation of rosin soap for size.

Abrasive. Any substance used for polishing or grinding surfaces, as emery or sand.

Absolute Pressure. Pressure referred to a vacuum. Atmospheric pressure is actually 14.7 pounds per square inch absolute, usually given as 15 pounds.

Absolute Temperature. Gases lose $1/273$ of their value per degree centigrade in cooling from the freezing point of water. 273 degrees below zero centigrade or freezing point of water, is the absolute zero. Temperatures so referred are called "absolute." One degree C. above the freezing point of water would therefore be 274 degrees C. absolute. On the Fahrenheit scale absolute zero is—459° F.

Absorbency. The amount of liquid that a unit weight of paper will take up, usually measured by the height to which water will rise in a strip of filter or blotting paper, in a unit time, and in water resistant papers by immersion and determination of increased weight due to water retained.

Absorbent Papers. Paper made of suitable stock which is beaten a short time with sharp tackle and with roll down hard. It is run on the machine with minimum pressure and rapid drying. Soft cotton rags are best for this. Examples are blotting and filter papers.

Acceleration. Increase of speed; in physics, the rate at which velocity changes. The acceleration of falling bodies due to gravity is expressed by the factor *g*. or *G*. about 32 feet per second.

Account Book Papers. Strong, even, well made papers, hard

tub sized, with good writing surface, usually azure laid. The finish of both sides of the paper should be as nearly equal as possible, and opacity is essential. (Bromley)

Acetate of Lead. See Lead Acetate.

Acetic Acid. An acid compound having the formula CH_3COOH , obtained by secondary fermentation of wine, cider or other fermented substances. It is the cause of the sour flavor of vinegar. Also obtained when wood is destructively distilled. Sometimes used to hasten the action in bleaching paper stock.

Acid. (1) Chemically a compound containing hydrogen which is liberated when the acid reacts with a metal. (2) Having a sharp, pungent taste. See Sour. (3) The opposite of alkaline.

Acid Dyes. Colors whose nature is such that they can only dye fibres satisfactorily in an alkaline medium.

Acid Plant. That part of a sulphite mill wherein the sulphur is burned and the acid liquor prepared and stored; includes limestone towers, or other absorption apparatus.

Acid Proof. Having the property of resisting the action of acids, or acid fumes, such as the lining, lead and bronze fittings of sulphite digesters and acid plants.

Adansonia. The inner bark of the baobab or monkey bread tree, found on the west coast of Africa. The bast fiber contains a high proportion of cellulose.

Adhesive. Substances which cause two or more surfaces to stick together on drying, as glue, silicate of soda. Paper having one side coated with gum or mucilage.

Adipo Cellulose. A term applied to the complex cellulose substance which forms the cuticular tissue of cotton, straw esparto and other fibrous plants.

Agalite. A filler similar to talc or finely ground asbestos, and having the same chemical composition; chiefly magnesium silicate.

Agave Americana. Agave aloe. A plant yielding fibre suitable for paper making. Sisal cord or string is manufactured from a Mexican variety.

Agitator. A means of stirring fluids, usually consisting of a central revolving shaft to which arms of various patterns are attached with the object of keeping the mass in motion.

Air Dry. Containing an amount of moisture not further reduced by exposure to the air at ordinary temperatures (about 60° F.) and humidities. In the case of wood pulp it is agreed to be air dry when the pulp is 90 per cent fiber and 10 per cent water. See Moisture Test.

Air Dried Browns. Brown papers carefully made and slowly dried by exposure to air, which ensures great strength and elasticity.

Air Pump. See Suction Pump.

Albumen or Albumin. One of the chief constituents of animal matter. Egg and blood albumen may be used in place of casein for coated papers, but coagulate at a lower temperature and do not form so waterproof a coating on treatment with formaldehyde.

Albumenised. Papers used in photography. Coated with albumen from the white of egg mixed with ammonium chloride, and then treated with silver salts sensitive to light.

Alder. A tree found in the Western United States and British Columbia. The red alder (*Alnus Oregona*) has been successfully cooked by the soda process. The pulp is similar in properties and fiber length to that from poplar.

Alea. See Esparto.

Algae. Tiny organisms growing in water, which give trouble owing to their growth in the water circulation systems of mills, plugging small pipes and causing slime. One form causing this trouble in iron pipes is known as *crenothrix*.

Alkali. Soda, potash or ammonia; oxides, carbonates and hydroxides of sodium, potassium and ammonium.

Alkali-Cellulose. The compound obtained by treating cotton or wood cellulose with concentrated sodium hydroxide. Used in manufacture of viscose.

Alkali Waste. A residue of impure calcium sulphide produced in the manufacture of sodium carbonate.

Alloys. Mixtures of metals, made while molten, such as babbitts or bronzes.

Aloe. See Agave.

Alternating Current. Intermittent current of electricity flowing alternately in opposite directions. The period of change is called a cycle.

Alum. Papermakers' alum is sulphate of alumina $Al_2(SO_4)_3 \cdot 18 H_2O$. Other alums are double salts such as sodium alum $Al_2(SO_4)_3 \cdot Na_2SO_4 \cdot 24 HO$. Used as a mordant for dyes. See Mordant and Size.

Alum Cake. A commercial form of aluminum sulphate.

Alumina. The oxide of aluminum prepared by strongly igniting Aluminum hydrate in a crucible. A white amorphous powder.

Aluminate of Soda. Prepared by dissolving freshly precipitated hydrate of alumina in caustic soda. Can be used in the process of rosin sizing.

Alumine. A trade name for a filler, consisting chiefly of calcium sulphate with a small proportion of aluminum sulphate. Said to be well retained by paper.

Aluminum Hydrate. A bulky gelatinous precipitate produced when ammonia is added to soluble aluminum salt. If ammonia is added to the solution obtained by extracting paper with hot water, the formation of a gelatinous precipitate indicates the presence of alum salts.

Aluminum Sulphate. Used in the sizing of paper. Added to animal size it acts as a preservative. Added to rosin size it precipitates the rosin upon the fibres in the beating engine. See Alum.

Aluminum Resinate. A compound held by some authorities to be formed when rosin soap is treated with alum in sizing paper. Evidence of its formation is not conclusive.

Amalgam. An alloy in which mercury is one of the constituents.

Ammonia. A solution in water of the colorless gas NH_3 —properly "ammonia water." Also called "spirits of hartshorn" used as a solvent for casein in coating for paper and in various ways as an anti-acid.

Ammonium Chloride. A white powder or crystalline solid obtained by reaction between ammonia and hydrochloric acid; used in electric dry batteries and as a soldering flux.

Ammunition. Hard, strong papers made of wood pulp, hemp, or gunny; used for shot gun shells and other purposes relating to ammunition.

Amorphous. Having no crystalline structure.

Ampere. The unit of electric current; the current produced by an electro-motive force of one volt against a resistance of one Ohm. It amounts to a transfer of one coulomb per second.

Amplitude. Extreme distance of swing, vibration or oscillation, as of a pendulum.

Amyloid. A substance obtained by the action of 30 parts of

sulphuric acid upon cotton or cellulose. The syrup produced is poured into water and the resultant precipitate dried. The horny mass obtained is amyloid.

The change produced when paper is passed through sulphuric acid for the manufacture of vegetable parchment is the formation of this amyloid on the surface of the paper.

Angle Papers. Envelope papers, made in the usual way and after slitting cut at an angle, in order to economize in cutting the envelope blanks. Should have little difference in strength between machine and cross direction, contain little filler and sometimes a little soap as a top size.

Anhydride. An oxide which by the addition of H_2O to its molecule produces an acid, as sulphuric anhydride, SO_3 , which upon combining with water forms sulphuric acid, $SO_3 + H_2O = H_2SO_4$.

Anhydrous. Without water; dry.

Aniline. A coal tar compound formed by replacing one hydrogen atom of benzene (C_6H_6) by the amino group NH_2 .—Formula $C_6H_5NH_2$, also called aminobenzene or phenylamine. Its formation is one of the first stages in manufacture of a number of dyes; hence all coal tar dyes are often referred to as aniline dyes.

Aniline Sulphate. A compound which dissolved in water is used for detecting mechanical pulp and esparto in pulps, giving a strong yellow color to liquefied fibers.

Animal Size. Glue or gelatine. See Size.

Animal Sized Paper. A term applied to any paper which has been sized with gelatine or glue.

Annaline. Trade name for calcium sulphate used as a loading material.

Annatto. A fugitive coloring matter obtained from fruit of the annatto tree, giving shades of orange.

Anode. The conductor or electrode by which an electric current enters the cell.

Anti-Acid Manila. A hard, strong paper made of hemp, or sometimes wood pulp, used for insulating purposes, as telephone wires, etc., and guaranteed free from an acid reaction.

Antichlor. A substance to offset or eliminate an excess of hypochlorite of lime or bleaching powder. Sodium thiosulphate or any sulphite would act thus.

Anti-Froth Oils. Various compounds used to break up the foam as in coating mixtures. There is no general specific, as froth is due to a wide range of causes.

Antimony. A gray metallic element which alloyed with lead increases its hardness and prevents collapse when antimonial lead is used for pipes in gas coolers of a sulphite mill.

Antiquarian. See Sizes of Paper.

Antique. A light, bulky paper having a soft, velvety feel, used largely for novels and standard works of fiction. In Europe sometimes made of esparto only or mixed with chemical wood pulp; in America various mixtures of sulphite and soda being used. Uncalendered and as a rule containing no loading.

Apron. An overlapping tray or sheet for carrying fluids or moving masses over gaps.

A rubber covered sheet carrying half stuff or paper stock onto the wire of a fourdrinier paper machine from the headbox.

Apron Board. A hinged board attached to flow box of a paper machine to support apron.

Aqua Fortis. See Nitric Acid.

Aqua Regia. A mixture of nitric and hydrochloric acids—so named because it dissolves the noble metals, gold and platinum.

Armature. (1) A piece of soft iron laid across the poles of a magnet. (2) That portion of a motor which by the motion of itself or another portion called the field cuts the lines of magnetic force producing alternately positive and negative currents.

Arsenious Acid. See Sodium Arsenate.

Artificial Parchment. See Parchment.

Art. A paper, in Europe usually made of esparto and wood pulp; in America of a combination of sulphite and soda pulp. Coated on both sides with a mixture of glue and some mineral, such as china clay, and highly glazed. Used for the printing of half-tone blocks.

Asbestine. Ground short fibred asbestos, used as a paper filler.

Asbestos. The mineral amphibole, frequently of a fibrous, silky nature and used for fire prevention and heat conservation. Composition chiefly magnesium silicate.

Asbestos Paper. A paper composed largely of fibrous asbestos, used for theater curtains, screens, heat insulation, etc.

Ash. The mineral content of organic substances; the residue left after burning off combustible and volatile matter.

Ashcroft Tester. See Bursting Strength.

Asiatic Acid. Sometimes used for acetic acid.

Aspen. (*Populus tremuloides*), a tree of the poplar family used for making wood pulp, usually by the soda process. Common in northern United States and Canada. Allied to cottonwood, which see.

Atlas. See Sizes of Paper.

Atmosphere. The gaseous envelope of the earth; a mixture of oxygen and nitrogen (approximately 21 per cent oxygen and 79 per cent nitrogen) with small quantities of carbon dioxide and rare gases.

Atmospheric Pressure. The pressure exerted on the earth by its envelope of air. At sea level this is 14.7 pounds per square inch.

Auramine. A yellow coal tar dyestuff basic in character, used in coloring paper, wool, silk and leather.

Autogenous Weld. The form of weld used in lead burning; the metals being placed in contact and melted by the oxy-hydrogen blow pipe. Now much used with oxyacetylene blow pipe for all kinds of metal repairs. Applies also to the electric arc in welding.

Available Chlorine. The chlorine in bleaching powder which effects the bleaching of cellulose, present normally in bleaching powder to the extent of 36 per cent

Azure Laid. A term of long custom applied to certain high class writings of a particular shade of blue, made on a "laid" mold or with a "laid" dandy. See Laid.

Azure Wove. A term applied to certain high class writings of a particular shade of blue, made on a "wove" mold or with a "wove" dandy. See Wove.

B

Babbitt. A bearing metal named for its originator; composed at first of copper 3.7 per cent, antimony 7.4 per cent, tin 88.9 per cent. Bearings lined with such an alloy are said to be babbitted.

Back. The driving side of a paper machine.

Backing Papers. Brown papers which paste down easily and serve to strengthen the flong or mould of alternate paper and paste used for stereotype work.

Backfall. The dam of special design behind the roll in a beater. Its function is to assist circulation of the stock.

Back Tender. Member of the machine crew next under the

machine tender. "Second hand." Has charge of paper from presses to winders, passing sheet over dryers, is responsible for the drying and finishing operation and seeing that other subordinates are properly stationed when starting up or when handling breaks.

Backwater. The water extracted from the paper stock on the machine by the wire, suction equipment and presses and returned to the system in order to save the clay, coloring, materials, alum, size or fibers contained therein.

Bag. See Bag Mill, Bag Paper.

Bagasse. Refuse of sugar cane after extracting sugar; possible source of fiber for paper and so used to a slight extent.

Bag Mill. A factory where paper bags are made.

Bag Paper. Paper of which bags are made. The usual qualities necessary are strength and toughness. Sulphate and carefully prepared sulphite pulps make good bag stock.

Balata. Gum of *Mimusops Globosa*, native of Guiana and used in the rubber trade; hence Balata belts, made from cottonweb impregnated with balata in place of rubber.

Bale. A bundle of pulp sheets or other merchandise pressed and tied, or bound, while under pressure in the baling press.

Balsam. A coniferous tree of the fir family (*Abies balsamea*), used somewhat as a source of wood pulp, notable for the resinous syrup in its outer bark, known as Canada Balsam. If bark is not completely removed, this resinous matter may get into paper made from balsam wood pulp. The fibers are shorter and softer than those of Spruce.

Bamboo. Any member of the genus *bambusa*. A giant grass, often reaching a height of 40 feet, found in the tropical regions of the Eastern Hemisphere. Makes good pulp by sulphite or soda process; has no bark to remove; yields annual crop. Fibers not so long as, and narrower than in spruce, and similar to manila. There are many species, not all of them suitable for pulping.

Bank. A term applied to high-class machine writings, which are very strong and thin. Made from rags or wood pulp, usually beaten from eight to nine hours. Paper is similar to *loan*, but not quite so heavy or transparent.

Thin, tough, glazed or unglazed; banks run from hand-made, tub-sized, air-dried to machine-made, engine-sized machine finished. The usual sizes and weights are foolscap, 7 lbs., large post, 11 lbs., medium, 13 lbs. See Sizes and Ream Weight.

Bank Note Papers. Papers for which new linen cuttings are used. The notes having to withstand considerable handling the paper is specially strong and tough. In Europe hand-made, in North America mostly machine made.

Baobab. See *Adansonia*.

Barite. See Barytes.

Barium Sulphate. The chemical term for blanc fixe, produced by a reaction between sodium sulphate and barium chloride. Sometimes called "Basafor" in the trade, from its formula $Ba SO_4$. Also called Heavy Spar. Its specific gravity is 4.1. Sometimes used as a filler for paper. Part of the mixture used in coating papers is Barium Sulphate.

Barker. A machine for removing bark from pulpwood. There are two general forms: the rotating cylinder, removing bark by rubbing and tumbling of the blocks in the interior and the revolving vertical disc containing knives usually inserted in its face by which the bark is shaved off.

Barytes. Barium sulphate as mined in nature.

Basic Colors. Dyes chiefly made from aniline, requiring the use of an acid mordant for dyeing paper fibers.

Basswood. *Tilia Americana*; a North American tree with light, soft wood, sometimes used for pulp by the soda process.

- Bast.** Inner bark of plants; flax, hemp and jute are bast fibres.
- Bastose.** The cellulosic portion of the jute fibre.
- Bauxite.** A natural mineral, the hydrated oxide of alumina, from which alum is made by treatment with sulphuric acid.
- Beater.** A machine consisting of a tank or "tub" usually with a partition or "midfeather" and containing a heavy roll, revolving against a bedplate. Both roll and bedplate may contain horizontal metal bars (called fly bars) set on edge. The materials used in paper are circulated in the body of the beater and pass between the roll and bedplate. Formerly referred to as "beating engine" or "engine," Hollander, Umpherston, Taylor.
- Beater Roll.** The heavy roll which gives the stock the necessary mechanical treatment and which also causes circulation in the beater, and which contains horizontal bars on its periphery at close intervals. The roll can be raised or lowered in relation to the bedplate, and, in addition to causing circulation mixes the fiber constituents together with the chemicals and fillers and is the agent for the variation in fiber condition and to a great extent the character of the paper made.
- Beater Tub.** The tank body of the beater. Of various sizes and designs, usually oval in plan and divided by a partition or "midfeather." In it the constituents of paper are mixed and prepared for the machine.
- Beating.** The process carried out in the beater whereby the various ingredients of paper are mixed and receive mechanical treatment. Where little mechanical treatment is required a mixing tank is used instead as in news print and the reaction of size and alum facilitated. The coloring of paper is usually done while in the beater and there much of the ultimate character of the paper is determined.
- Bedplate.** A removable plate of stone or containing steel or bronze bars, placed across the direction of flow in beaters and underneath the roll.
(2) The stationary plate in the spout of the chipper in conjunction with which the chipper knives act in producing chips.
- Beech.** A broad leaved tree with hard wood found in North-eastern United States, not used in any quantity for papermaking. (*Fagus atropunicea*.)
- Bell.** A defect in paper caused by bubbles of froth passing the slices and breaking before the suction boxes.
- Benzo-Purpurine.** An aniline dye similar to Congo red, yielding a bright red color unaffected by dilute mineral acids. A useful stain for microscopic work.
- Berlin Blue.** See Prussian Blue. Ferric Ferrocyanide.
- Bible Paper.** A thin strong paper, used for Bibles originally, in which opacity is a chief characteristic, obtained by carefully boiling and beating cotton rags. Wood pulp is now used in the cheaper qualities.
- Bill Papers.** Hand or machine-made, all rag papers, tub sized, air-dried. Being used for documents, such as promissory notes, bills of exchange, etc., the paper must be very durable.
- Birch.** *Betula Alba*. A tree of the deciduous or broad-leaved type, White Birch. Sometimes used for pulp in northern United States and Canada.
- Biscuit.** A term originally applied to papers used for packing biscuits, particularly thin sulphate papers glazed on one side. The paper is now used for wrapping all kinds of dry goods.
- Biscuit Caps.** Thin white N. G. papers, employed for making bags for confectionery and similar trades, in various sizes (Bromley.)
- Bisulphite of Lime.** The compound of sulphur dioxide and lime present in the cooking liquor used by sulphite pulp mills whereby in the digestion, the lignin and non-fibrous materials of wood are rendered soluble.
- Black Ash.** Crude carbonate of sodium produced from the black liquor in the rotary burners in the recovery system of soda pulp mills.
- Black Liquor.** Spent liquor resulting from the cooking of wood or other vegetable material by the soda or sulphate processes. It contains the dissolved lignins in combination with the mor-
ganic chemicals. See Recovery.
- Blanc Fixe.** See Barium Sulphate.
- Bleach.** (1) The process of whitening cellulose by removal of coloring matter, lignin and other readily oxidizable impurities. The agent by which bleaching is done. (2) Often refers specifically to Bleaching Powder (Chloride of Lime) Calcium chlorohypochlorite or its solution.
c f. Sodium sulphite used in bleaching mechanical pulp.
- Bleaching Powder.** Calcium hypochlorite, a compound in the form of powder produced by passing chlorine gas over slaked lime. Used for the bleaching cellulose from rags or wood. Standard bleaching powder contains 35-36 per cent of available chlorine.
- Block Pile.** The reserve of wood blocks cut to proper length for use in wood pulp mills.
- Blotting.** The trade term for blotting paper. A paper without sizing and of marked absorbent character. Best made from rags.
- Blow.** The dumping or discharging of a boiler or digester under pressure when the digestion of its charge of wood chips is completed.
- Blow Off.** The contents of the digester. The gas or liquor emitted in discharging a digester.
- Blow Pit.** The vat or tank of wood or concrete into which the contents of a boiler or digester is discharged. Equipped with a "vomit stack" or pipe to permit the escape of the steam and usually provided with a perforated false bottom. In it the pulp is drained and washed.
- Blow-off Valve.** The valve controlling the discharge of the digester.
- Blue Print.** 1. A paper sensitive to light, used by engineers for copying tracings of plans, machinery, etc. Prepared by floating white paper on a solution of yellow prussiate of potash (potassium ferrocyanide) and peroxide of iron. Paper should have no filler and preferably of rag stock tubsized with gelatine. Must stand handling in water, essential to the development of exposed prints.
2. The plans or designs shown on such paper.
- Bluestone—Blue Vitriol.** See Copper Sulphate.
- Boards.** Stiff sheets of paper usually of a definite required thickness sometimes consisting of several layers of paper made on board machines which see.
- Board Machine.** A machine with several cylinder moulds instead of a fourdrinier wire. It may have from two to seven or more moulds, vats, and couch rolls depending on the thickness required or the number of layers desired in the finished sheet.
- Boehmeria.** See China Grass.
- Boil.** See Boiling.
- Boiling.** The act of changing liquids to a gaseous state; also the treatment of rags or old paper by heating in water with lime or soda at the boiling temperature, or under pressure in a closed vessel. Also refers to the preparation of rosin size.
- Bolt Wood.** Wood for headings or staves of barrels, ash, elm, red oak. Pulpwood delivered in two or four foot lengths.
(To be continued)

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Examination of China Clay.—James Strachan.—*Paper*, xxix, No. 21, 16-18 (Jan. 25, 1922); *Paper Trade J.*, lxxiv, No. 1, 46-47 (Jan. 5, 1922).—The author considers that a 12 per cent moisture content for clay with present methods of drying is fairly reasonable; but, as moisture is absolutely useless to the paper maker and represents so much dead weight that he has to handle and cannot put into his paper, the producer should adopt modern methods of drying by which the moisture content could be reduced to 1 or 2 per cent without danger of calcining. The following are suggested as practical standards for the maximum amount of grit allowable in various grades of clay: China clay for coating, not more than 0.1 per cent; for fine papers, not more than 0.25, for news, not more than 0.5; low-grade clays containing 5 to 10 per cent mica should be described commercially as "mica clays." A method is described for the determination of grit by repeated sedimentation and decantation in beakers or jars of standard size.—A. P.-C.

Alleged Adsorption of Alumina from Aluminum Sulphate Solutions by Cellulose.—Alfred Tingle, E. B. Eddy Co., Ltd., Hull, Que., Canada. *J. Ind. Eng. Chem.*, xiv, 198-199 (March 1, 1922); *Paper*, xxix, No. 26, 9-10 (March 1, 1922).—The observed withdrawal of alumina from solutions of aluminum sulphate in the presence of cellulose is due to chemical precipitation by non-cellulose material present as an impurity. Both neutral and basic solutions of aluminum sulphate were brought in contact under various conditions with cellulose in the form of (a) acid-washed filter paper, (b) bleached sulphite spruce pulp. By the methods employed no change in the aluminum content of the solutions could be detected, except when a pulp was used which contained calcium compounds and gave a strongly alkaline reaction to water, with which it was extracted. The deduction is made that absorption does not occur to any appreciable extent, and that the phenomena which have been accounted for by this cause are due to other causes. The question should be thoroughly investigated and an authoritative decision reached when pure standard cellulose becomes available for research. Methods of investigation which attempt to separate aluminum salts from cellulose by repeated washing can only be employed when great caution is used as to the nature of the materials, and can never be trusted when basic solutions are in question. The experiments carried out are described in detail.—A. P.-C.

Beet Pulp as a Substitute for Wood Pulp in the Manufacture of Paper.—Fr. patent No. 517,302, F. S. Gerona.—*Chimie et Industrie*, vii, 127 (Jan. 1922).—Beet pulp contains about 80 per cent of utilizable material free from incrusting matter. It can be mixed with other fibrous materials in proportions up to 50-70 per cent. It can be used dry for the manufacture of ordinary grades of paper, and fresh, either as it comes from the diffusers or after fermentation, for the manufacture of the finer and whiter grades.—A. P.-C.

Fertilizer Experiment with Spruce Transplants.—Siefert and Helbig. *Forstwiss. Centralbl.*, xlii, 258-261 (1920); *Botan. Abs.*, ix, 32 (Aug. 1921).—Results of observations (1914-1917) on the height growth of spruce transplants, some unfertilized and others treated in 1909 with various fertilizers, are presented. The plants to which nitrate fertilizers had been applied showed more rapid growth during the first few years, but by 1917 had been almost overtaken by the unfertilized ones, whose actual percentage growth at that time was considerably greater. (Compare next abstract).—A. P.-C.

Results of Nitrogen Fertilizer Experiments with Spruce.—M. Helbig.—*Forstwiss. Centralbl.*, xlii, 262-267 (1920); *Botan.*

Abs., ix, 23 (Aug. 1921).—The results of experiments in fertilizing spruce nursery stock, 1907-1917, are summarized. The conclusion is reached that fertilization of young spruce with nitrates alone is not profitable, but that complete fertilization is advantageous in cases where tall planting stock is desired at an early age.—A. P.-C.

Observations on the Planting of the Quicker Growing Conifers.—H. S. Stewart.—*Trans. Roy. Scottish Arboric. Soc.*, xxxiv, 141-145 (1920); *Botan. Abs.*, viii, 266 (July, 1921).—Spacing even as close as 3 feet in the case of Douglas fir and Japanese larch does not prevent, and only partially restrains, branch growth. If clean boles are required, hand pruning close to the stem must be resorted to. Such spacing, moreover, results in the production of many suppressed boles of little value which interfere with the root development of the more vigorous, dominant neighbors. Spacings of 5.5, 6 and 7 feet are advocated respectively for Sitka spruce, Japanese larch and Douglas fir.—A. P.-C.

The Partington Rotary Screen.—*Papeterie*, xlv, 64-66, (Jan. 25, 1922).—Brief description of the merits of the Partington rotary screen, which are noiseless operation; no joints, packings or rubber aprons, elimination of vibrating plates and hence decrease in power consumption; simple, automatic and visible rejection of tailings; the drum can be taken apart; when the quality of the stock is changed, the plates are easily changed to meet the new requirements, ready adjustment of the length of the stroke and the number of revolutions per minute.—A. P.-C.

Pulp Refiner.—Fr. Patent No. 520,875, S. Milne, *Monit. Papeterie Francaise*, lii, 720-722 (Nov. 15, 1921).—A rotary disc acts in conjunction with two fixed discs, housed in a suitable casing, the pulp passing from the center of the casing towards the outside, around the rotating disc, and then from the periphery of the casing toward the center. This arrangement has a fourfold purpose: (1) To allow of treating very thick pulp, (2) to afford means of easily adjusting the distance of the fixed discs from the rotary discs, (3) to pack the shaft bearings so as to prevent loss of pulp, (4) to provide the discs with blades which are equidistant from one another and from one or more large openings for the passage of the pulp.—A. P.-C.

Feltless Wet Machine.—U. S. A. Patent No. 1,407,398, H. R. Farnsworth, assignor to Sandusky Foundry and Machine Company (Feb. 21, 1922).—The machine consists essentially of a perforated polygonal drum covered with wire similar to a Fourdrinier wire, each face having a suitable cover for confining a definite quantity of pulp on that face. Means are provided for intermittently rotating the drum. During the periods of rest of the drum the pulp is fed to one of the flat sides, and when the proper amount of pulp has been fed the feed is shut off and compressed air is forced under the cover, pressing the water out of the pulp. The drum is then rotated to bring the next face into position and the operations are repeated. At a suitable point the pulp is removed from the machine by blowing air outwardly through the drum face.—A. P.-C.

Cutting Blade for Wet Machines.—Can. Patent No. 205,402, J. G. Carrier, Nov. 9, 1920.—A. P.-C. Also, Can. Patent No. 216,333, March 7, 1922.—A. P.-C.

Method and Apparatus for Draining a Moist Web on a Wet- or Paper Machine.—U. S. A. Patent No. 1,405,211, A. J. Haug, assignor to Improved Paper Machinery Company (Jan. 31, 1922).—A perforated roll is pressed against the couch roll to express the water of the layer of fiber, the water passing through the pressing roll. The latter may be made to pick the sheet of fibers off the

couch roll, or may even press directly against the cylinder mould, filling the function of the couch roll.—A. P.-C.

Export Packing.—C. C. Martin, National Paper & Type Co.—*Pulp and Paper*, xx, 10 (Jan. 5, 1922).—An enumeration of the varied knowledge required for properly packing goods for export shipments.—A. P.-C.

Process for the Purification of Commercial Wood Pulp for the Manufacture of Special Papers or for Chemical Purposes.—Fr. Patent No. 525,720, Exportingenieur für Papier und Zellstofftechnik G. m. b. H., June 15, 1921. *Papier*, xxv, 14-15 (Jan. 1922).—The bleached or unbleached pulp, either dry or moist, is placed in a rotary digester, 50 per cent (on the dry weight of the pulp) of caustic soda, sodium sulphide, or a mixture of the two, is added, and just enough water to obtain a solution of 4 to 5 degrees Be. The air is removed as much as possible either by steaming or by displacing with an inert gas or a reducing gas, the digester is closed, rotated for some time, and then heated with steam until a pressure of 0.5 to 2.5 atmospheres is obtained and maintained for several hours. After relieving the pressure the pulp should be merely moist, and should not be bathed in liquor. The pulp is then washed thoroughly, and is heated at a consistency of about 25 per cent to 100 degrees C. in the digester which is rotated for about 4 hours.—A. P.-C.

Electrolytic Cell for the Preparation of Hypochlorite Solutions.—U. S. A. Patent No. 1,409,782, D. McD. Rogers and A. T. Masterman, March 14, 1922.—A. P.-C.

Process of Manufacturing Hypochlorite Solutions.—U. S. A. Patent No. 1,403,993, C. F. Wallace and J. C. Baker, Jan. 17, 1922.—A solution of the base (preferably sodium carbonate, caustic soda, or milk of lime, but any weak base such as magnesia, borax, basic phosphates, etc.) is passed through an injector and chlorine gas under pressure is forced into the solution in sufficient amount to immediately react with the whole of the base. Solutions containing up to 5 per cent of available chlorine have thus been prepared, and higher concentrations can doubtless be obtained.—A. P.-C.

Electrolytic Cell.—U. S. A. Patent No. 1,404,387, S. M. Green, Jan. 24, 1922.—The cell contains two endless (preferably circular and concentric) perforated cathodes covered by suitable diaphragms. The annular space between the cathodes forms the anode chamber. The space outside the anode chamber can be connected to a suction pump so as to draw the electrolyte through the diaphragms when the latter begin to get clogged up. It is claimed that this effects an increase of about 100 per cent in the output of a cylindrical cell without increase in dimensions or floor space required; the volume of the anode chamber, being reduced, there is a smaller volume of electrolyte in the cell at any time, which effects considerable economies when starting up or shutting down; the flow through the cathodes is more regular, improving the efficiency of the cell; and finally the life of the diaphragms is increased.—A. P.-C.

Method of Bleaching Pulp.—U. S. A. Patent No. 1,409,799, Geo. M. Trostel, March 14, 1922.—Bleach solution of suitable concentration is heated to 170 to 180 degrees F and is allowed to act for 7 to 15 minutes on the pulp at a consistency of 18 to 20 per cent. The bleaching may be carried out in one or two stages as preferred.—A. P.-C.

Handling Liquid Chlorine.—D. K. Bartlett, Electro Bleaching Gas Company—*Paper*, xxix, No. 8, 18-19 (Oct. 26, 1921); *Paper Ind.*, iii, 1277-1281 (Dec., 1921).—A discussion of the handling and storage of chlorine from a safety point of view. Danger from the gas occurs when it gets out of the container, which can take place in three ways: by explosion, by an increase of pressure (due to heat) sufficient to rupture the container, or by leaks. The first can be disregarded as chlorine is non-explosive. The second is slight owing to the high critical temperature of chlorine. A few cases of rupture of containers have occurred in the manufacturers' plants (none on record in transit or users' plants) due to the presence of foreign material in the container, which reacted with

the chlorine. The presence of a leak is soon detected owing to the odor of the gas, and its position can be located by means of ammonia. The gas is non-inflammable and non-poisonous, but is a very strong irritant. Inhaling it will not cause death unless the subject remains for a long time in an atmosphere of highly concentrated gas. Local conditions affect the storage problem, so that a detailed discussion of the best method of storage is useless at the present stage of the art; but the problem can be readily worked out for any particular case.—A. P.-C.

Pulping and Washing Engine of the Hollander Type.—U. S. A. Patent No. 1,402,456, H. W. Southworth, Jan. 3, 1922.—The engine is equipped with an ordinary beater roll and bedplate, and one washing drum, the place of the second washing drum being taken by a pair of pressure rolls. When the stock reaches these rolls, most of the water is pressed out and held back of the rolls to be eliminated through the washing drum, while the stock is mixed with fresh water on the other side of the pressure rolls.—A. P.-C.

The Herrbold Waste Paper Pulper.—U. S. A. Patent No. 1,391,056, William J. Herrbold, Sept. 20, 1921. *Paper*, xxix, No. 12, 13-15 (Nov. 23, 1921).—The stock is fed into a horizontal cylindrical tank with suitable agitators, and from the tank is fed into a chamber provided with an internal spiral and a top plate which is weighted down and held in place by beans of springs, so that a certain predetermined pressure must be exerted by the stock in the chamber to lift the top plate. On overflowing from this chamber the stock falls on a concave deflector and finally returns to the tank, where it goes through the cycle over again. It is claimed that the disintegrating of the stock is very effective and rapid and is without grinding or abrading action.—A. P.-C.

Rag Shredder.—U. S. A. Patent No. 1,407,364, H. H. Waller, Feb. 21, 1922.—A. P.-C.

Process for the Recovery of Waste Paper.—U. S. A. Patent No. 1,396,227, R. A. Marr, Nov. 8, 1921.—*Paper*, xxix, No. 15, 28-29 (Dec. 14, 1921).—The waste paper is treated with a solution of soap (preferably soft soap, i. e., potash soap) and ammonia, heated to about the boiling point, and subsequently treated in a beating engine.—A. P.-C.

Thermit Welding for Beater Shafts.—*Paper*, xxix, No. 9, 27-28 (Nov. 2, 1921).—A beater shaft at the James Leo Company, Jersey City, N. J., which broke, was thermit welded, and then broke again about 1 foot from the weld. The old cast iron shaft was then cut back to the larger portion and welded to an eight-inch forged steel bar, making it stronger than it originally was.—A. P.-C.

Beater Roll.—U. S. A. Patent No. 1,362,219, G. L. Bidwell, Dec. 14, 1920. Also Can. Patent No. 215,567, Feb. 7, 1922. Also U. S. Patent No. 531,530.—The roll is built up of longitudinal segments which have bars, or knives, cast in one piece with the segment. These segments are bolted to 3 spiders (one in the middle and one at each end) keyed to the shaft, the joints between the segments being filled with lead. The ends of the roll are tightly closed by means of suitable plates.—A. P.-C.

Process and Apparatus for the Preparation of Paper Pulp.—U. S. A. Patents Nos. 1,405,944 to 1,405,947, C. W. Shartle, Feb. 7, 1922.—These patents cover various arrangements of breaking engines, beaters and screens.—A. P.-C.

The Beating of Paper Pulp.—Raymond Fournier.—*Papier*, xxiv, 539-542 (Dec., 1921).—A general discussion of the function of beating. The author also shows how it is that cylindrical fibers, such as hemp, flax, etc., hydrate more readily than flat fibers, such as cotton, and insists on the fact that the felting power of a given material does not depend on the length and diameter of the ultimate fibers as generally prepared in the laboratory, but on the length and diameter of the beaten fibers as they are fed to the paper machine.—A. P.-C.

Method and Means for Coloring Paper.—U. S. A. Patent No. 1,407,247, E. B. Brewster, Feb. 21, 1922.—The color is sprayed

through nozzles onto the web on the wire by means of compressed air, the pipe carrying the nozzles being given a reciprocating motion at right angles to the line of travel of the paper.—A. P.-C.

Paper-Cutting Device for Paper Machines.—U. S. A. Patent No. 1,402,451, W. H. Shellington, assignor to International Paper Company, Jan. 3, 1922.—The patent covers a device for cutting the web just before it leaves the driers to facilitate its introduction into the calender stack.—A. P.-C.

Cylinder and Felt Cleaner for Paper Machines.—Can. Patent No. 215,672, Bird Machine Company, assignee of C. S. Bird, Feb. 5, 1922.—The spray pipe is given a reciprocating motion at right angles to the line of travel of the felt or cylinder, the amplitude depending on the distance between the spray nozzles. It is claimed that this effects a more thorough cleaning with a lower consumption of water and power.—A. P.-C.

Method of Removing the Web from the Wire on to the Felt.—Can. Patent No. 214,078, Bagley & Sewall Company, assignee of F. W. Monaghan, Nov. 1, 1921.—The moist web passes over a suction couch roll so designed that compressed air can be blown out of the roll along a given generator, thereby blowing the web off the wire against a small roll and from there on to the press felt.—A. P.-C.

Hardy Stock Consistency Regulator.—Can. Patent No. 214,176, Mills Works & Machinery, Ltd., assignee of George Hardy, Nov. 8, 1921.—Addition to Can. Patent No. 184,950, June 18, 1918. Also U. S. A. Patent No. 1,406,009, Feb. 7, 1922.—A. P.-C.

Removing Condensed Steam from Paper Machine Dryers.—U. S. A. Patent No. 1,406,991, Alfred MacKay, assignor to Geo. B. Ferrier, Feb. 21, 1922.—Three volute spiral chambers, each having but one inlet and one deflector rib to guide the water into the chamber, deliver the water into a chamber in one of the heads of the dryer, from which it is evacuated through one of the journals. The purpose of having more than one spiral is not to increase the capacity of the water removing means, but to prevent interference in the flow of water such as occurs when there are several inlets to the one spiral.—A. P.-C.

Drive for Paper Machine Dryers.—U. S. A. Patent No. 1,407,154, F. A. Headson, Feb. 21, 1922.—A. P.-C.

The Manufacture of Woolen Press Felts.—E. S. Bates, Bates & Innes, Ltd.—*Pulp and Paper*, xx, 41-45 (Jan. 19, 1922); *Paper Trade J.*, lxxiv, No. 8, 43-46 (Feb. 23, 1922); *Paper*, xxx, No. 1, 7-11, 18 (March 8, 1922).—A detailed description of the process of manufacture of paper machine felts and jackets, with a brief discussion of their strength and performance, and a plea for closer co-operation between the paper mills and felt manufacturers in order to enable the latter to give better service.—A. P.-C.

Watermarking Embossing Machine.—U. S. A. Patent No. 1,408,633, P. D. Parsons, assignor to Scott Paper Company, March 7, 1922.—The paper is embossed by pressing the embossing wheel on the moist web against one of the dryers, giving a sharp impression resembling a watermark. More particularly applicable to tissue paper for towels, etc.—A. P.-C.

Milkey Paper Dryer.—U. S. A. Patent No. 1,387,061, L. E. Milkey, Aug. 9, 1921.—*Paper*, xxix, No. 12, 15-17 (Nov. 29, 1921); *Paper Ind.*, iii, 1253-1254 (Dec., 1921).—The paper is held between two wires and pressed firmly against a perforated roll from which air under pressure is blown through the sheet to carry away the moisture.—A. P.-C.

Method of Drying Paper.—Fr. Patent No. 527,975, G. C. Joly, Aug. 5, 1921.—*Papier*, xxiv, 545-546 (Dec., 1921); *Papeterie*, xliii, 1120-1122 (Dec. 25, 1921).—The paper is dried on an endless wire cloth which passes over a series of electrically heated plates, which are arranged in sets above one another, the whole being enclosed in a suitable chamber.—A. P.-C.

Stock Consistency Regulator for Paper Machines.—U. S. A. Patent No. 1,408,977, L. Boivin, March 7, 1922.—The stock outlet from the chest supplying the paper machine is conical-shaped. A

hollow copper bulb, attached to a vertical rod, is suspended in the outlet, and controls the amount of stock flowing out according to its height in the outlet. Above this is a second copper bulb, also hollow, which is attached to a suitably pivoted vertical rod. The greater the consistency of the stock, the heavier it is and the more it presses down on the upper copper bulb, thereby lowering it and decreasing the area of the outlet opening, so that the actual amount of stock delivered is kept constant.—A. P.-C.

Electrical Paper Machine Drives in Canadian Mills.—J. N. Stephenson.—*Pulp and Paper*, International Number II, 145-147 (Dec., 1921).—A brief review of the principal features of the Harland, General Electric and Westinghouse sectionalized paper machine drives.—A. P.-C.

Process and Apparatus for the Manufacture of Corrugated Paper.—Fr. Patent No. 526,331, Arkell Safety Bag Co., U. S. A. *Papeterie*, xliii, 1122-1125 (Dec. 25, 1921).—Compressed air is used to press the paper against a support placed immediately in front of the corrugating device. The device can be applied to existing paper machines.—A. P.-C.

Save-All.—U. S. A. Patent No. 1,409,885, E. Partington, March 14, 1922. Also Eng. Patent No. 171,718, May 21, 1920.—The back-water from the paper machines is gently introduced into a suitable chest, at or near the bottom, and is kept in gentle movement in the lower portion of the chest. The agitation prevents the fibers from settling completely to the bottom of the chest; but it does not affect the upper layers out of which the fibers settle, leaving the overflow practically clear.—A. P.-C.

Angle-Gauge Attachment for Paper Cutting Machines.—U. S. A. Patent No. 1,410,519, H. Stengel, assignor to A. J. Otten, March 21, 1922.—A. P.-C.

Feeding Device for Paper Cutters, Perforators, Embossers, etc.—Fr. Patent No. 526,624, Thieble. *Papeterie*, xliii, 1035 (Nov. 25, 1921).—The feeding of the paper is not uniform, as there are two dead points, and it is just at this moment that the cutter, embosser, etc., is made to act.—A. P.-C.

Coating Paper with Metals or Mica.—R. Miller. *Papeterie*, xliii, 1022-1025 (Nov. 25, 1921).—Brief notes on the coating of paper with aluminum, tin, bronzes and mica.—A. P.-C.

Paper Roll Bushing.—U. S. A. Patent No. 1,408,126, H. L. Mumm, Feb. 28, 1922.—A. P.-C.

Method of Finishing Paper.—U. S. A. Patent No. 1,407,611, G. W. Wheaton, Feb. 21, 1922.—A. P.-C.

Corner-Cutting Gauge for Paper-Cutting Machines.—U. S. A. Patent No. 1,402,540, V. T. Rybicki and B. Greenfield, Jan. 3, 1922.—A. P.-C.

Indicating Device for Paper-Cutting Machines.—U. S. A. Patent No. 1,402,543, F. O. Scott, assignor to Southworth Company, Jan. 3, 1922.—The patent covers a device for indicating or determining the position of watermarks, or the like, recurring at intervals in the web, so that the cutting operation can be regulated to insure locating the mark at, say, the center of each sheet cut from the web.—A. P.-C.

Process of Finishing Paper.—U. S. A. Patent No. 1,401,980, H. H. Hanson and P. E. Hodgson, assignors to Eastern Manufacturing Company, Jan. 3, 1922.—The fabrics used in platers are pasted along the edges to the zinc plates, thereby greatly facilitating the handling.—A. P.-C.

Method of and Apparatus for Imparting a Pattern Finish to Paper.—U. S. A. Patents Nos. 1,403,628 and 1,403,629, W. J. Price, Jan. 17, 1922.—A. P.-C.

Safety Device for Paper-Cutting Machines.—U. S. A. Patent No. 1,408,020, W. B. Murtha, Feb. 28, 1922.—A gate is allowed to drop on the cutting table as soon as the knife begins to move; and must be raised again by hand after the stroke of the knife.—A. P.-C.

Process and Apparatus for the Manufacture of Fiber Board.—Fr. Patent No. 529,682, Manley Chew, Sept. 15, 1921.—*Papier*,

xxv, 16-17 (Jan., 1922); *Papeterie*, xlv, 27-28 (Jan. 1, 1922).—Same as Can. Patents Nos. 209,835 and 209,836, March 29, 1921.—A. P.-C.

Mechanism for Scoring Paper Board, Pasteboard, or Fiber Board.—U. S. A. Patent No. 1,408,486, G. W. Swift, March 7, 1922.—The scoring is accomplished by opposite lines of paired rollers, with tongues opposed to grooves, the rollers of the opposing lines being arranged so that each successive pair is slightly nearer together than the preceding one. The scoring is thus done gradually as the board passes through the rollers. Also, parallel scorings are made by means of opposing lines of rollers arranged radially, so that as the board progresses through them the scoring mechanisms approach one another to provide the necessary surplus material required for the formation of the scoring.—A. P.-C.

Plaster Board Composition.—Can. Patent No. 215,002, J. N. Ehr, W. J. Ehr and G. W. Matteson, Jan. 10, 1922.—The composition consists of 50 per cent hard plaster, 25 per cent paper pulp, 25 per cent swamp moss pulp, which are mixed dry. Sufficient water is added to bring the mass to a suitable plastic state to be applied with a trowel. The composition may also be formed into sheets to be nailed to a wall as in the case of common plaster board.—A. P.-C.

Machine for the Manufacture of Double Face Corrugated Board.—Fr. Patent No. 518,939, Geo. W. Swift, *Monit. Papeterie Francaise*, lii, 752-754, (Dec. 1, 1921).—A. P.-C.

Preparation of Paper Coating Composition.—U. S. A. Patent No. 1,407,773, J. H. Ryan, Feb. 28, 1922.—Clay or whiting is mixed with water to a thin dough and ground for a suitable length of time in a ball mill. Sizing material is then added and the mixture ground for about 30 minutes more.—A. P.-C.

Manufacture of Coated Paper.—Wm. T. Schenk, Champion Coated Paper Company—*Pulp and Paper*, xix, 1276 (Dec. 22, 1921).—A brief and general discussion of the precautions to be taken in the coating of paper, which is considered as being a difficult art. A plea is made for a dull or semi-dull finish instead of the high glossy surface at present in vogue.—A. P.-C.

Notes on Coated Printing Paper.—R. Muller, *Papeterie* xlvii, 962-965 (Nov. 10, 1921).—Practical notes on the quality of coating stock and on the proper method of coating.—A. P.-C.

Bituminous Roofing.—Can. Patent No. 214,157, Barber Asphalt Paving Company, assignee of A. T. Cavey, Nov. 8, 1921.—Adhesive (preferably 90 per cent castor oil and 10 per cent gilsonite) is applied to one surface of each of two webs of saturated felt, which are pressed together with the adhesive between them, and are then given an external application of a non-sticky bituminous material having a relatively high melting-point to serve as a weather-resisting coating. When required for use the two plies are stripped apart and laid in such a manner that the adhesive will unite the overlaps.—A. P.-C.

The Manufacture of Tissue Paper for Confectionery, etc.—*Papeterie*, xliii, 1068-1069 (Dec. 10, 1921).—A description of the manufacture of this grade of paper, with particular emphasis on various minor details essential for obtaining good results.—A. P.-C.

Ornamental Paper.—U. S. A. Patent No. 1,403,765, M. A. T. Gillbee, assignor to A. M. Collins Manufacturing Company, Jan. 17, 1922.—The stock is given a surface coating of casein and glue, containing satin white or clay, and while still wet colors are applied in patches by means of rollers carrying different shades or colors. The web is then subjected to the action of brushes which move sideways of the line of travel of the paper, and which soften and blend and practically obliterate the lines of demarcation between the patches.—A. P.-C.

Machine for Applying Waterproof Coating to Paper and Other Fabrics.—U. S. A. Patent No. 1,410,465, C. C. Gamn, March 21, 1922.—A. P.-C.

Machine for Marbling Paper.—U. S. A. Patent No. 1,405,163, M. Rheinauer, Jan. 31, 1922.—A. P.-C.

Machine for Making Stretchable Crinkled Paper.—U. S. A. Patent No. 1,405,384, B. Arkell, assignor to Arkell Safety Bag Company, Feb. 7, 1922.—A. P.-C.

Japanese Handmade Paper.—Ch. Groud, *Papier*, xxiv, 4 (Jan., 1921); *Paper*, xxix, No. 11, 16-17 (Nov. 16, 1921). Translation by A. Papineau-Couture.—A description of the manufacture of handmade paper from the paper mulberry in Japan.—A. P.-C.

Method and Apparatus for Making Corrugated and Wrinkled Paper.—Fr. Patent No. 520,974, Otaka Fabric Co. *Monit. Papeterie Francaise*, liii, 16-18 (Jan. 1, 1922).—The patent covers the process of and machinery for corrugating paper longitudinally and creasing or wrinkling it transversely.—A. P.-C.

Laid and Wove.—Dard Hunter, Chillicothe, Ohio. *Paper*, xxix, No. 16, 12-14, 16-18 (Dec. 21, 1921).—A historical sketch of early paper making moulds, giving the origin of the terms "laid" and "wove" paper.—A. P.-C.

Carton from Fibrous Material.—U. S. A. Patent No. 1,408,752, I. X. List, assignor to National Card Mounting Company, March 7, 1922.—A. P.-C.

Method and Device for Perfecting Folded Paper Boxes.—U. S. A. Patent No. 1,405,139, L. E. La Bombard and M. H. Sidebotham, assignors to Specialty Automatic Machine Company, Jan. 31, 1922.—A. P.-C.

Machine for Making Boxes.—U. S. A. Patent No. 1,407,331, L. E. La Bombard, assignor to Specialty Automatic Machine Company, Feb. 21, 1922.—A. P.-C.

Paper Bucket.—U. S. A. Patent No. 1,407,483, B. I. Rike, assignor to Rike Folding Box Company, Feb. 21, 1922.—A. P.-C.

Pails, Receptacles, etc., from Fibrous Pulp.—U. S. A. Patent No. 1,407,409, A. W. Handford, assignor to American Seamless Container Company, Feb. 21, 1922.—A. P.-C.

Adhesive Applying Mechanism for Paper-Bag Machines, etc.—U. S. A. Patent No. 1,407,612, H. W. White, Feb. 21, 1922.—A. P.-C.

Envelope-Making Machine.—U. S. A. Patent No. 1,407,206, H. F. Marston, Feb. 21, 1922.—A. P.-C.

Safety Envelope.—U. S. A. Patent No. 1,407,212, E. F. Nissen, Feb. 21, 1922.—A. P.-C.

Material Handling as a Factor in Eliminating Industrial Waste.—H. V. Coes, Ford, Bacon & Davis. *Chem. Met. Eng.*, xxv, 1096 (Dec. 14, 1921).—A brief discussion of the subject illustrated by a specific example of the saving effected by the introduction of proper methods of handling materials in a certain paper mill, in which the estimated annual saving was over \$60,000.—A. P.-C.

The Volume of Air Required in Air Drying.—C. T. Mitchell, J. G. White Engineering Corp.—*Chem. Met. Eng.*, xxv, 1088-1090 (Dec. 14, 1921).—A discussion of the problems which confront the average engineer in attempting to find the volume of air required in air drying, giving the various factors affecting atmospheric evaporation, and showing how the calculations may be made from wet bulb temperatures and psychrometric tables. Charts are given showing the volume of air required with ultimate air humidity (i. e., humidity of the air coming from the drying chamber) of 70, 85 and 100 per cent, which show the importance of low initial humidity and also that increases in the initial temperature above 110 degrees are not attended with proportionate increase in efficiency.—A. P.-C.

Lubrication of Paper Machine Bearings.—Vincent G. Hazard, Pusey & Jones Company, Wilmington, Del.—*Belting*, Oct., 1921; *Paper*, xxix, No. 11, 14-15 (Nov. 16, 1921).—A brief discussion of problems of the paper industry in the care and selection of bearings, covering care of cast iron bearings, wood bearings, lignum vitae bearings, use of water as a lubricant for wood, and ball and roller bearings.—A. P.-C.

Apparatus for Evaporating Liquids.—U. S. A. Patent No. 1,406,997, P. Muller, assignor to Chemical Foundation, Inc., Feb.

21, 1922. The liquid is sprayed into a chamber in such a manner that the finely-divided material forms a flat layer of mist between two layers of air moving through the chamber just above and just below, parallel to, and in the same direction as the liquid spray; thus effecting rapid evaporation of the water at a relatively low temperature.—A. P.-C.

New Electrical Systems of Heating Liquids and Solids.—*Can. Chem. Met.*, v, 342-244 (Dec., 1921).—For heating liquids, a cascade electric heater has been devised, in which the heating effect is obtained by passing the current through the liquid itself, using alternating current to prevent electrolysis. For heating solids, pastes, or very viscous liquids which must be maintained at a fairly high temperature, an induction surface electrical heater is used: by placing a coil carrying alternating current in suitable relation to the surface, the induced current and hysteresis effects generate the necessary amount of heat, and the control of the primary results in perfect control of the temperature. This system can be applied to the dryers of paper machines, making it possible to maintain the dryers at any desired temperature most accurately, even when subject to variable rates of drying.—A. P.-C.

Anti-Corrosive Chemical Engineering Plants.—*Can. Chem. Met.*, v, 341-342 (Dec., 1921).—A brief description of "ceratherm" equipment made by Guthrie & Co., Accrington, England—Cera-therm centrifugal pumps are designed to handle any corrosive liquid, whatever head or quantity may be desired or whatever liquid may be used. It is resistant to the action of heat, hot acids, cold alkali, solutions of copper salts, liquids containing chlorine, bromine, copper chloride, aqua regia, etc., and has a high crushing resistance. Vats are constructed which are lined to any desired thickness with "ceratherm" in such a manner that it cannot be detached from the side by the severest mechanical or chemical strain, and can be kept perfectly clean. The lining is also suitable for "paper digesters" (pulp digesters are probably meant—Abs.) and it is claimed that this lining is at least a thousand times as resistant as any lining which has hitherto been provided to the chemicals contained therein, and need only be one-sixth as thick as the old-fashioned lining.—A. P.-C.

Recording Instruments in the Pulp and Paper Industry.—L. G. Bean, Bristol Company, Waterbury, Conn.—*Pulp and Paper*, International Number II, 122h-122i (Dec., 1921); *Paper Trade J.*, lxxiv, No 2, 50-51 (Jan. 12, 1922)—A partial enumeration of the uses to which recording instruments can be put in the pulp and paper industry.—A. P.-C.

Improving the Performance of Steam Boilers.—R. De Ker-gasdec.—*Technique Moderne*, xiv, 14-21 (Jan., 1922)—A discussion, largely mathematical, of chimney losses in boilers and of the methods of reducing them to a minimum, with special emphasis on the use of air preheaters, either with or without economizers. The advantages of the air heater are that it fills the same purpose as the economizer by recovering waste heat; it is lighter, cheaper, less cumbersome than the economizer and is not under pressure; the furnace can be supplied with hot air resulting in higher temperature, better combustion, and possibility of using poorer grade fuel.—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals From Which Abstracts Have Been Prepared for This Issue

<i>Can. Chem. Met.</i>	..... Canadian Chemistry and Metallurgy. 57 Queen street W., Toronto, Ont., Canada
<i>Chem. Met. Rev.</i>	... Chemical and Metallurgical Engineering. McGraw Hill Co., Inc. Tenth avenue at Thirty-sixth street, New York City
<i>Monit. Papeterie Francaise</i>	.. Le Moniteur de la Papeterie Francaise. 154 Boulevard Haussmann, Paris, France
<i>Papier</i>	..... Papier 251 West Nineteenth street, New York City
<i>Papier Ind.</i>	..... The Paper Industry. 356 Monadnock Block, Chicago, Ill.
<i>Papier Trade J.</i>	..... PAPER TRADE JOURNAL. 10 East Thirty-ninth street, New York City
<i>Papeterie</i>	..... La Papeterie. 9 Rue Lagrange, Paris (8*), France

<i>Papier</i>	..... Le Papier. 16 Rue du Rocher, Paris (8*), France
<i>Pulp and Paper</i>	..... Pulp and Paper Magazine of Canada. Garden-ville, Que., Canada
<i>Technique Moderne</i>	... La Technique Moderne. 49 Quai des Grands-Augustins, Paris, France
<i>Botan. Abs.</i>	.. Botanical Abstracts. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore Md.
<i>Chimie et Industrie</i>	.. Chimie et Industrie. 49 Rue des Mathurins, Paris, France
<i>J. Ind. Eng. Chem.</i>	... The Journal of Industrial and Engineering Chemistry. Charles L. Parsons, 1709 G St., N. W., Washington, D. C.

Better Paper for Money and Bonds

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1922.—America's money and bonds will be made of better paper next year, it was announced by Director Louis A. Hill of the Bureau of Engraving and Printing, discussing charges by the *Plate Printer*, a union paper, that "the standard of paper as now contracted for by the bureau is impossible and about as poor as can be imagined for Government securities."

Director Hill confirmed the *Plate Printer's* statement that "steps have been taken by Director Hill and Assistant Director Perry to improve it, and there are good prospects that as soon as possible better paper will be furnished to the bureau."

The quality now being used at the bureau is half linen and half cotton, Director Hill said, but after consultation with the Crane Company, which makes the silken fiber paper at its mill at Dalton, Mass., recommendation has been made for the next fiscal year's contract to call for 75 per cent linen and 25 per cent cotton. By the fiscal year 1923-1924, Director Hill said, it was hoped the Government could count on getting back to all-linen paper. But at present prospects, are, said Mr. Hill, of getting a paper 25 per cent better at one-half a cent a pound less.

During the war, on account of the great pressure on the mills and lack of raw supplies, it was necessary to use all-cotton paper, Mr. Hill said, and the bureau is now working around again to use all-linen as rapidly as the mill can supply it.

During a year the bureau uses a total of 180,000,000 sheets of this special paper, it was said, turning it by printing, into countless millions of dollars worth of paper money and Government bonds.

Much of the linen was made from flax supplied from Russia, a supply which has been seriously curtailed.

China to Operate Mill on Government Basis

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1922.—Consul General Heintzleman at Hankow, China, reports to the Department of Commerce that the Chinese Government Paper Mill, at Seven Mile Creek, Hankow, has recently ceased operation, and, owing to the lack of funds, the Ministry of Finance, which controls the plant proposes to place the mill on a semi-Government basis under the joint management of officials and private individuals. In order to re-open the mill the manager plans to raise a loan, half of the shares to be taken by the Government and the other half to be offered to the public for purchase.

The building was erected about ten years ago. It was designed by British architects. The machinery is of American origin, except for the electric plant and the pumping plant which are British. About 200 males and 25 females were employed when the mill was in operation. The principal materials used are reeds, paddy stalks and bamboo. The nominal capacity is 300 bales of paper per diem, though the actual output when the mill was last in operation was considerably less than half of that amount. It took the form of cheap news print. The annual output was approximately 82,000 reams. The Government Printing Office at Peking used part of this paper.

Up to 1921 the paper machines of the mill consisted of one 72 inch. Fourdrinier machine and one 26 inch Bagley & Sewell Fourdrinier.

METHODS OF FURNISHING STOCK

A line of study suggested to the Service to Members' Committee of the Technical Association and to which some thought has been given, is the methods of furnishing stock to the preparation apparatus of a paper mill and the measurement of the stock or the computation of the quantity supplied.

Different Forms and Usual Grades

The following is a list, so far as is known, of the different forms in which stock is generally supplied and the usual grade of material:

1. *Rolls or baled sheets*—75 to 95 per cent dry content—unbleached and bleached chemical wood pulp from drying machines
2. *Hydraulic pressed sheets*—50 to 60 per cent dry—mechanical and chemical wood pulp and also cotton linter pulp.
3. *Moist laps or sheets*—25 to 45 per cent dry—mechanical and chemical wood pulp, deinked magazine and waste paper pulp.
4. *Drainer stock*—20 to 40 per cent dry—bleached rag and rope pulp; also chemical pulp in general
5. *Noodles*—25 to 40 per cent dry—stock scraped from a wet machine press roll, loose or baled, mechanical pulp.
6. *Slush*—3 to 8 per cent dry—a liquid pulp suspension stored in tanks; all grades of wood pulp and pulp from old papers.

General Systems

In the preparation of stock for the paper machine there are three general systems:

1. *Beaters*—in which is attained the pulping of forms 1 to 5, inclusive; the mixture in the desired proportions of the fiber constituents; the preliminary mechanical treatment and the incorporation of the required chemicals, fillers and coloring materials. At the same time the beater tub usually serves as a unit of measurement whereby to check the quantity of fiber supplied. To do so it is necessary that the density of the contents be uniform. As the capacity of a beater rarely exceeds 2,000 pounds of dry fiber and is frequently as small as 500 pounds, it is used in mills making specialties where frequent changes of grade occur. They are in general use in mills of the older type on all grades. They are necessary in mills making classes of paper where mechanical treatment of the fiber is desirable, such as rag, rope and manila papers, sulphite bond, tissue and wrapping papers of the higher grades. In general, beaters are regarded as necessary equipment except in mills making paper largely of mechanical pulp, such as news print, and in some making book papers and boards.
2. *Mixing tanks*—in which the fiber constituents previously reduced to a liquid suspension are measured and mixed together with the chemicals, without definite mechanical treatment. In this system it is more important than in the beaters that the consistency of the stock be uniform as there is usually no check by weight against the measurement. This system is used principally in modern news print mills, to some extent in book paper mills, and is in general confined to mills in which few changes of grade are necessary. The stock is either slushed directly from the pulp mills or from a supply of pulp previously disintegrated in water.
3. *Continuous mixing system*—where the paper stock is prepared by bringing together in proper proportion, the different streams of fiber constituents in liquid suspension, and the other ingredients required. The proper mixing is attained in a box equipped with baffles, in the paper machine

screens and in the head box. The quantity of each ingredient is obtained by metering the flow which must be of a uniform consistency or concentration. This system is used in the most advanced type of paper mills where they operate continuously on the same grade of paper, such as in news print mills.

Methods of Measurement

In obtaining the accurate quantity of pulp used, when in the form 1 to 5, inclusive, the difficulty lies in the variation of the moisture content. If the moisture content were uniform weighing the pulp and using a conversion factor would give accurate results. Where the moisture content varies within wide limits, as it frequently does, the accuracy of the weighting method depends primarily on the sampling for the moisture test. All the difficulties encountered in testing pulp for moisture, are found.

Where beaters are used it is the common practice to weigh or measure the pulp and use a factor believed to be the average moisture per cent and to check the calculation by the capacity of the tub, bringing the contents to as nearly uniform density as the operator is capable of, according to his judgment. Some beater men become very accurate in this regard but it usually requires natural ability and long experience. Apparatus have been devised to measure the density of the stock in the beater, based on the viscosity of the mass, to serve as an aid to the operator. Where the pulp is slushed the measurement is dependent on regulating the consistency by the use of apparatus designed for the purpose.

The regulated stock is then measured either in the mixing tank by means of weightometers or by the use of a stock meter designed for the purpose.

Join Paper Men in Opposing Casein Tariff

The fight of the paper industry against the proposal of the agricultural bloc to have a duty placed on casein has found allies in the lumber industry, particularly the veneer manufacturers, because of the effect that such a duty will have upon their operations.

Through its central organization, the American Paper and Pulp Association, the paper industry has filed a brief with the tariff committee showing that the domestic production of casein, a glue made from milk, is far from sufficient to meet the needs of the paper industry, which uses casein in large quantities in the manufacture of book, cardboard, glazed and fancy papers. The production of casein also means the waste of milk as a food product, and the proposed duty of four cents a pound would mean not increased production in this country, but a higher price to the farmers for about one-third of the total amount consumed, while the importations would have to continue on the present scale.

The available domestic production of casein is from five to eight million pounds a year, while the 1920 consumption was over twenty one million pounds.

The proposed duty, therefore, would place an added cost of some \$800,000 a year on the price of a few grades of paper, and other products involving the use of this glue.

The contest has come to be a direct division between the agricultural bloc and the industrial states. In the West, Felix Hagensticher, president of the Bryant Paper Company of Kalamazoo, is leading the fight for the paper manufacturer, and in the Massachusetts region G. Frank Merriam, of the Holyoke Card and Paper Company of Springfield, is representing the paper manufacturers.

In the veneer industry such companies as the Underwood Veneer Company of Wausau, Wis., are interested, and the national association of plywood and panel manufacturers are also opposing the proposed duty.

PRODUCTION OF NEWS PRINT FOR THE MONTH OF APRIL

According to Statistics Just Issued by the Federal Trade Commission Production for April, 1922, Compared With April, 1921, Shows a Decrease Amounting to About Three Per Cent for Total News Print and Less Than One Per Cent for Standard News—Publishers' Stocks and Transit Tonnage, April 30, Represented 32 Days' Supply at the Existing Rates of Consumption.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1922.—The following is a tabulation of the reports received by the Federal Trade Commission from domestic manufacturers of news print paper from jobbers buying and selling news print paper and from publishers using news print paper. Import and export statistics of the Department of Commerce are also included in the review. When possible the figures for 1922 are compared with those for the corresponding period of 1921, 1920, 1919 and 1918.

The figures which follow show the results of the commission's tabulation for April, 1918 to 1922, inclusive:

	Number of mills	Stocks on hand 1st of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
Total News Print:					
April, 1922	79	28,180	111,861	115,167	24,874
April, 1921	88	41,789	115,408	122,091	35,106
April, 1920	89	27,564	128,269	134,160	21,673
April, 1919	70	31,932	116,278	111,825	36,385
April, 1918	66	26,984	111,480	113,600	24,864
Total (4 mos.) 1922 ..	..	21,934	432,962	432,022	24,874
Total (4 mos.) 1921 ..	..	24,763	449,810	439,467	35,106
Total (4 mos.) 1920 ..	..	15,369	500,014	493,710	21,673
Total (4 mos.) 1919 ..	..	19,408	450,426	433,449	36,385
Total (4 mos.) 1918 ..	..	31,713	416,384	423,233	24,864
Standard News (included in total news print):					
April, 1922	65	23,298	105,079	108,276	20,101
April, 1921	67	35,517	105,855	111,792	29,580
April, 1920	75	25,104	118,917	124,936	19,085
April, 1919	51	24,869	107,445	101,078	31,236
April, 1918	50	20,699	101,497	103,305	18,891
Total (4 mos.) 1922 ..	..	19,607	404,892	404,398	20,101
Total (4 mos.) 1921 ..	..	19,573	412,632	402,625	29,580
Total (4 mos.) 1920 ..	..	12,338	454,368	451,621	19,085
Total (4 mos.) 1919 ..	..	15,656	412,168	396,588	31,236
Total (4 mos.) 1918 ..	..	26,482	377,528	385,119	18,891

NOTE—Above figures for total news print do not include hanging paper.

The average production of total news print and standard news, based upon the total combined production for the years 1917 to 1921, inclusive, amounted to 110,000 tons of total news print and 99,700 tons of standard news, for a period corresponding to April. The actual production for April, 1922, amounted to 111,861 tons of total news print and 105,079 tons of standard news, which, for total news print was 2 per cent above the average for the five-year period and for standard news 5 per cent above the average.

The production of news print for April, 1922, compared with April, 1921, shows a decrease, amounting to about 3 per cent for total news print and less than 1 per cent for standard news.

The production for April, 1922, compared with April, 1920, shows a decrease of 13 per cent for total news print and about 12 per cent for standard news.

The production for April, 1922, compared with April, 1919, shows a decrease of 4 per cent for total news print and 2 per cent for standard news.

Mill stocks of both total news print and standard news decreased during April, 1922.

Loss of Production

The following tabulation shows idle machine time reported to

the commission for the month of April, 1922. This does not include mills shut down during the entire month:

Reasons	Number of machines	Hours idle
Lack of orders	10	2,324
Repairs	9	319
Other reasons	13	512

Imports and Exports

The imports and exports of printing paper not dutiable (practically all news print) and of wood pulp for the month of March, 1922 compared with the month of March, 1921, were as follows:

	March, 1922 Net tons	March, 1921 Net tons
Imports of news print (total)	78,031	66,791
From Canada	73,119	50,801
Germany	2,086	3,740
Norway	1,262	1,229
Finland	658	5,358
Sweden	532	5,600
Other countries	374	63
Exports of news print (total)	2,791	1,096
To Argentina	1,049	331
Cuba	681	374
Canada	110	30
Philippine Islands	270	184
China	253	30
Other countries	428	147
Imports of ground wood pulp (total)	12,425	2,684
Imports of chemical wood pulp (total)	48,376	21,225
Unbleached sulphite	20,153	9,555
Bleached sulphite	13,478	6,259
Unbleached sulphate	14,548	5,384
Bleached sulphate	197	27
Exports of domestic wood pulp	3,041	2,496

The imports of news print for March, 1922, were 11,240 tons more than for March, 1921. The exports for March, 1922, were 1,691 tons more than for March 1921.

The tonnage to "Other countries" under "Exports of News Print" for March, 1922, includes 71 tons to Peru, 69 tons to Mexico, 51 tons to Uruguay and 56 tons to Colombia.

Jobbers' Tonnage

The following tabulation shows the news print tonnage reported by jobbers during the month of April, 1922, compared with April 1921, 1920, 1919, and 1918, together with commitments to buy and sell.

	On hand first of month Net tons	Received during month Net tons	Shipped during month Net tons	On hand end of month Net tons	Commitments to buy Net tons	Commitments to sell Net tons
Rolls, April, 1922	1,406	10,780	10,786	1,400	30,668	34,422
Rolls, April, 1921	2,112	7,777	7,353	2,536	39,268	43,896
Rolls, April, 1920	2,052	7,030	7,142	1,940	52,250	57,010
Rolls, April, 1919	3,403	3,056	3,527	2,932	53,168	66,016
Rolls, April, 1918	2,356	2,899	2,190	3,065	51,344	51,597
Sheets, April, 1922	4,504	2,279	2,515	4,268	2,029	1,489
Sheets, April, 1921	4,948	1,842	2,553	4,237	2,833	1,948
Sheets, April, 1920	3,333	2,556	3,076	2,813	4,647	3,452
Sheets, April, 1919	7,138	1,922	2,569	6,491	1,460	1,234
Sheets, April, 1918	6,701	3,503	3,317	6,887	5,830	5,467
Total News Print:						
April, 1922	5,910	13,059	13,301	5,668	32,697	35,911
April, 1921	7,060	9,619	9,906	6,773	43,101	45,844
April, 1920	5,385	9,586	10,218	4,753	56,897	60,462
April, 1919	10,541	4,978	6,096	9,423	54,628	67,250
April, 1918	9,057	6,402	5,507	9,952	59,174	57,064

Stocks of rolls in the hands of jobbers at the end of April were 6 tons less than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 236 tons less at the end of April than at the beginning of the month. The net decrease in the total stocks of news print in the hands of jobbers at the end of April amounted to 242 tons.

Commitments to sell roll news were 3,754 tons greater than commitments to buy. Commitments to sell sheet news were 540 tons less than commitments to buy.

Publishers' Tonnage

Monthly tonnage reports from 660 (a) of the most important news-paper publishing concerns and associations, grouped according to the principal business sections of the United States, together with a

(Continued on page 58)

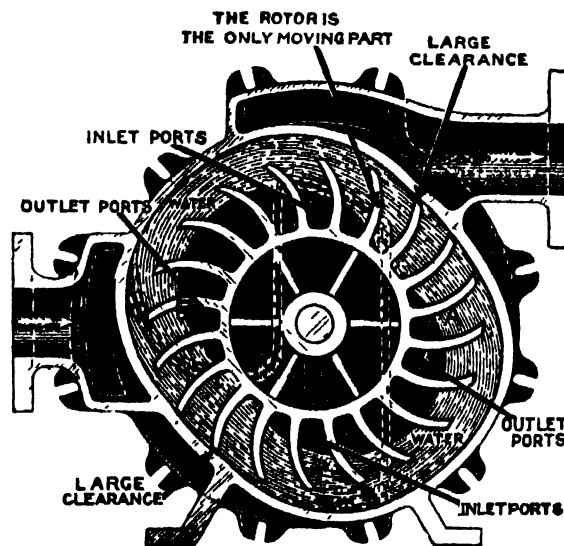
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Recent Incorporations

PAPER UTILITIES COMPANY, INC., Manhattan, New York. Manufacturing paper, wood pulp, etc., capital \$165,000. Incorporator, J. L. Watson, 37 Wall street, New York city.

TWIN FALLS BINDERS BOARD MILLS, INC., New York. Twin Falls Mills, Scotch Plains—Binders, board, paper, pulp and fiber products. Capital \$125,000.

BEAVER PRODUCTS COMPANY, Tonawanda, New York, wall boards and roofing material, capital \$100,000. Incorporators B. L. Worden, J. McC Mitchell, G. F. Phillips (Attorney, F. J. Knorr, Albany)

MORGAN L. ELLIS, INC., Boston, Massachusetts, general paper business. Capital \$50,000. Incorporators, Roland Litchfield, Brookline, Hazel M. Towner, Everett, Marian V. Bantillier, Walden

FLASHLIGHT PAPER TUBE COMPANY, Manhattan, New York. Capital \$10,000; Incorporators S. Cohen, J. J. and P. Mamel. Attorney, M. H. Mandel, 27 Pennsylvania avenue, Brooklyn

WESTERN PAPER STOCK CORPORATION, Delaware, manufacture, capital \$450,000, Incorporators R. Tietgens, Madison L. Goff, Joseph Gilles, San Francisco Corporation Service Company

AMERICAN PAPER PRODUCTS COMPANY, a Missouri corporation, qualified to do business in Indiana, no capital in this state at present; to manufacture paper, containers, etc.; agent in Indiana, Harry C. Basaler, Carthage

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1922.—The purchasing officer of the Government Printing Office has received the following paper bids:

6,000 rolls Toilet Paper: Mathers-Lamm Paper Company, at \$9.78 per case of 100 rolls; Riegel & Co., Inc., \$10.28; Continental Paper and Bag Mills, \$11.50; Adams Paper Company, \$15.50; Morgan Envelope Company, \$9.25; L. Barth & Son, Inc., \$11.00; Republic Bag and Paper Company, \$10.35; D. S. Walton & Co., \$11.00; R. P. Andrews Paper Company, \$8.93; Sanitary Products Corporation, \$11.00; Chas. G. Stott & Co., Inc., \$10.80; National Paper Supply Company, \$10.50; Dobler & Mudge, \$11.50; S. Freedman & Sons, \$9.80; Osburn Paper Company, \$11.00; Garrett-Buchanan Company, \$10.30; F. J. McCarthy Company, \$12.50; Paper Manufacturers Company, Inc., \$9.95, and The Whitaker Paper Company, \$11.70

9,500 lbs. 27 x 38, 95 Rope Manila Paper: Maurice O'Meara Company, at \$0.95 per lb.; Dobler & Mudge, \$1.099, and American Writing Paper Company, \$1.196.

4,100 lbs. 17 x 28, 20½ White Bond Paper, No. 61: The Aetna Paper Company, \$1.191 per lb.; Old Dominion Paper Company, \$1.519; R. P. Andrews Paper Company, \$1.13; Dobler & Mudge, \$1.17; Mathers-Lamm Paper Company, \$1.19, and Lee Paper Company, \$1.16.

10,400 lbs. 26½ x 41, 104 India Tint Cover Paper: Dobler & Mudge, at \$0.89 per lb.; R. P. Andrews Paper Company, \$0.943; The Whitaker Paper Company, \$0.9; Mathers-Lamm Paper Company, \$0.99; Geo. W. Millar & Co., Inc., \$1.048; Old Dominion Paper Company, \$0.99; Thos. Barrett & Son, \$1.107; Reese & Reese, \$0.9888; Maurice O'Meara Company \$0.94

7,800 lbs. 38 x 48, No. 16, Map Paper: Dobler & Mudge, \$1.85 per lb.; Old Dominion Paper Company, \$1.872; R. P. Andrews Paper Company, \$1.17; B. F. Bond Paper Company, \$2.1; Barton, Duer & Koch Paper Company, \$1.7625; The Whitaker Paper Company, \$1.89; American Writing Paper Company, \$1.828.

4,000 lbs. 24 x 36, 70 11½ Rope Manila Paper: Maurice O'Meara Company, \$0.95 per lb., and Dobler & Mudge, \$1.099.

4,375 lbs. 21 x 32½, 87½ No. 48, Yellow Commercial Ledger Paper: R. P. Andrews Paper Company, at \$1.19 per lb.; The Whitaker Paper Company, \$1.87; Old Dominion Paper Company, \$2.399;

Dobler & Mudge, \$20; Mathers-Lamm Paper Company, \$1.99; American Writing Paper Company, \$1.898

The purchasing officer will open bids on June 2 for the following: 6,000 lbs. Pink Calendered Tag Board in 24" rolls, 26" diameter. 5,150 lbs. (100 reams) 30 x 40, 51½ Map Paper, Lithograph Finish.

2,400 lbs. (50 reams) 20 x 25, 48 Moss Green Cover Paper.

The Aetna Paper Company has been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 4,100 lbs. (200 reams) of 17 x 28 20½ white glazed bond paper at \$1.191, bids for which were opened on May 19.

The Maurice O'Meara Paper Company has been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 14,800 pounds (100 reams) of 24 x 38—148 rope manila paper at 9½ cents a pound

Dobler & Mudge will furnish 4,800 pounds (100 reams) of 20 x 25—48 rough sage cover paper at \$0.923 per pound. Bids for these items were opened on May 10

NEWS PRINT PRODUCTION FOR APRIL

(Continued from page 56)

separate tabulation for the agricultural publications, show the following results for April, 1922:

Location of publishers (b)	Number of concerns	On hand first of month Net tons	Received during month Net tons	Used and sold during month Net tons	On hand end of month Net tons	In transit end of month Net tons
New England ..	79	17,111	15,898	18,087	14,924	1,870
Eastern States ..	174	53,092	59,029	63,131	48,990	9,834
Northern States ..	128	44,053	33,834	40,399	37,488	7,531
Southern States ..	75	9,332	9,414	9,841	8,905	1,961
Middle West ..	147	26,257	26,913	28,161	25,009	5,354
Pacific Coast ..	30	11,486	14,641	15,814	10,313	3,539
Farm Papers (c) ..	27	6,165	1,217	1,368	6,014	153
		660	167,498	160,946	176,801	151,643
						30,242

(a) This number represents a much larger number of publications.
(b) New England includes Connecticut, New Hampshire, Maine, Massachusetts, Rhode Island and Vermont; the Eastern States include Delaware, the District of Columbia, Maryland, New Jersey, New York, and Pennsylvania; the Northern States include Illinois, Michigan and Ohio; the Southern States include Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia; the Middle West includes Arkansas, Arizona, Colorado, Idaho, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wisconsin, and Wyoming; the Pacific Coast includes California, Oregon and Washington.
(c) The farm papers for the most part use special grades of news print, instead of the standard news

Publishers' stocks decreased 15,855 tons during the month. Average daily tonnage used during April was 421 tons more than the average used in March

Publishers' stocks and transit tonnage on April 30, represented 32 days' supply at the existing rate of consumption.

The domestic consumption of Standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually, for April, 1922, when compared with April, 1921, shows an increase of 19 per cent and an increase of 23 per cent when compared with April, 1920.

The above metropolitan dailies held 59 per cent of the tonnage on hand at the end of the month.

Average Prices Paid by Publishers

The weighted average price of contract deliveries from domestic mills to publishers during April, 1922, f. o. b. mill in carload lots, for standard news in rolls was \$3.570 per 100 pounds. This weighted average is based upon April deliveries of about 41,000 tons on contracts involving a total tonnage of approximately 572,000 tons of undelivered paper manufactured in the United States.

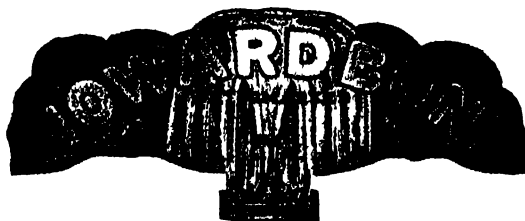
The weighted average contract prices based on deliveries from Canadian mills of about 24,000 tons of standard roll news in carload lots, f. o. b. mill in April, 1922, was \$3.497 per 100 pounds. This weighted average is based upon the April deliveries on contracts involving about 246,000 tons of undelivered Canadian paper.

The weighted average market price for April of standard roll news in carload lots, f. o. b. mill, based upon domestic purchases totaling about 10,000 tons, was \$3.548 per 100 pounds.

New York Office
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Chicago Office
1148 Otis Bldg.

Howard Bond



Howard Ledger

"The Paper of Many Uses"

Manufactured by

THE HOWARD PAPER COMPANY,

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FORGE LAP-WELDED

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ALL SEAMS LAP-WELDED

AMERICAN WELDING COMPANY

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SEAMS
HEATED WITH
FURNACES
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TIAL SEAMS
HEATED WITH
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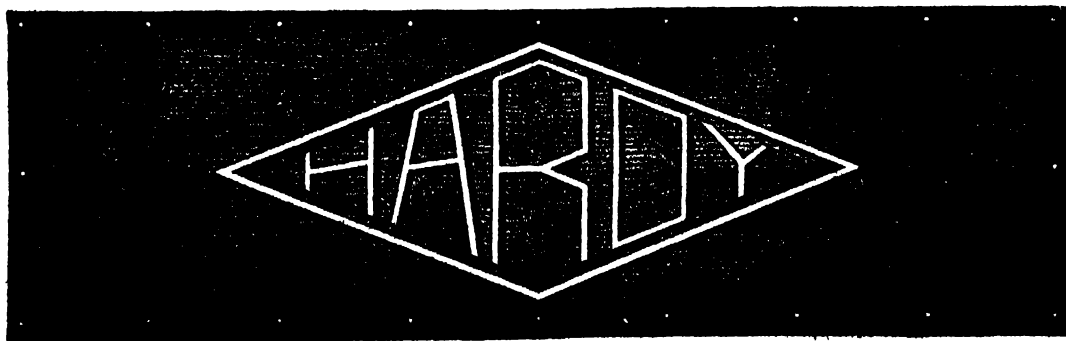
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If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

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WILLIAM A. HARDY & SONS COMPANY, Fitchburg, Mass., U.S.A.



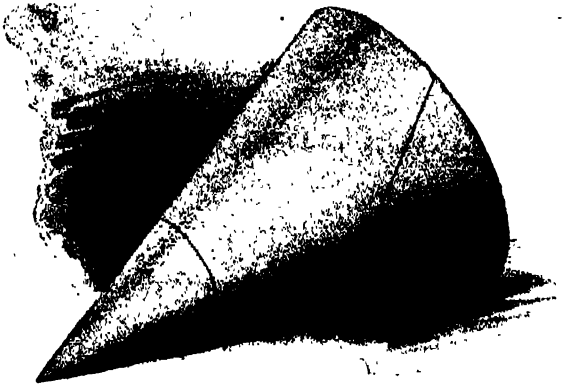


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No bottom to unexpectedly drop out.
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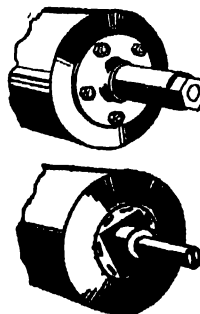
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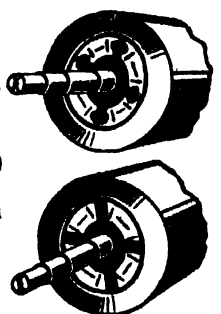
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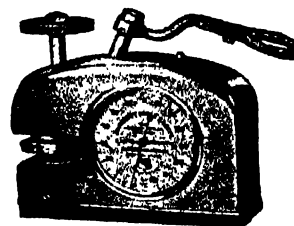
Free Roll Blue Prints



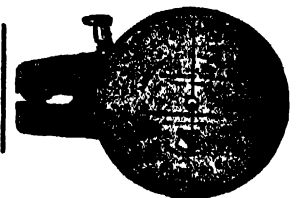
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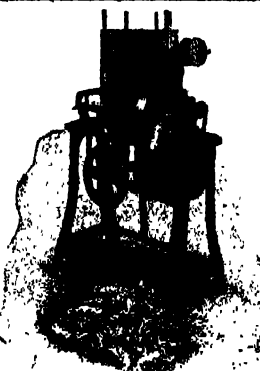
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Actual necessities for all those who make, sell or purchase paper in any form. The thousands in daily use testify to their efficiency.

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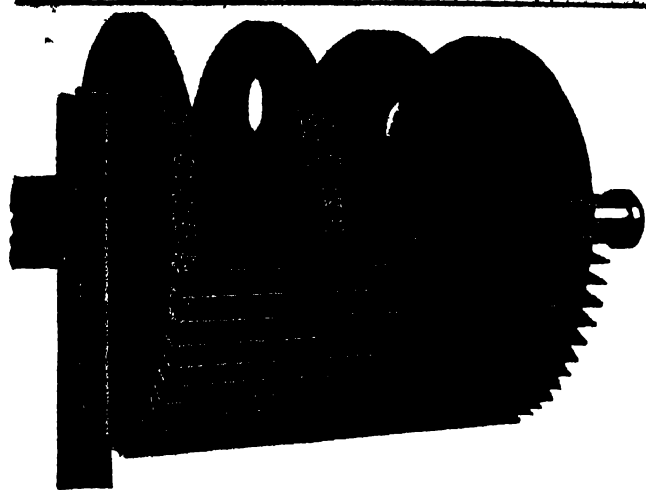


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**BEATING and WASHING ENGINES
FLY BARS—BED PLATES—
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Our new **KEYED TYPE BANDLESS ROLL** is the final result of Many Years of Experience.

May we not tell you about its many advantages?

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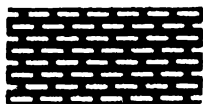
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485 Inch Round



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Producers of the Highest Grade
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The Largest Sulphur Mine in the World

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Main Offices: Frasch Building, 33 Rector Street, New York

EMERSON MANUFACTURING CO. LAWRENCE MASS.

See the Second-Hand Machinery ads and note the
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**EMERSON
BEATING ENGINES**

They seldom wear out and are never thrown out.
PERFECT CIRCULATION. NO "PADDLING."

The "EMERSON" JORDAN

does its work with half the power required by others of no
greater capacity.

WRITE FOR DETAILS



New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, May 31, 1922.

What with the suspension of all business over the holiday, paper merchants and manufacturers have enjoyed, nevertheless, a week of increasing prosperity. While there have been no marked price changes, confidence is generally restored in every branch of the industry, and dealers report a gratifying number of inquiries and subsequent orders. In the face of the impending slump which usually occurs during the summer months, business may, at this time, be characterized as unusually brisk. Even board, tissue, and twine dealers appear to have become more optimistic despite the difficulties with which they have been confronted, and the markets for news print, waste paper and both chemical and mechanical pulp have continued to make strides in a forward direction. It is predicted by many reliable authorities that at the actual beginning of the summer season conditions will have become ameliorated to such a great extent that the time will be ripe for a normal harvest of dollars in the early fall. Not much progress is expected during the summer months, naturally, due to any number of reasons. Not only is it a period of low water, but inventories are taken, vacations have their place and a general period of "house-cleaning" is declared. In view of the fact that present market conditions show a surplus in many lines with a demand that is insufficient to liquidate it, this period should, if anything, have a beneficial effect in that it will allow consumption to catch up with production. By next fall, it is hoped that the cogs of industry will be in so much better running order that mills will not be compelled to run at less than capacity to meet a more nearly normal demand.

News print is enjoying a phenomenal business and has been since the first of the year. From all appearances, mills can ill afford to curtail production in this line even during the summer, as newspapers are continually increasing their advertising space and circulations are becoming more widespread. Confidence is fully restored in the market and prices are firm. Rumors of an increase in transit rolls have been current, but these still remained unconfirmed from official sources.

Book paper is still slow in regaining its foothold, but despite the spotty demand there is an unmistakable activity in evidence. Prices have not yet reached a firm basis, and the base price of \$6.25 on super book is not expected to be a permanent one. Dealers are encouraged by the increasing number of inquiries.

Fine papers are in good demand for export and sulphate bonds of the higher grades are being sold in greater quantities for the domestic market according to merchants. Combined with the generally better feeling which now exists in the fine paper market this has given the situation a firmer aspect.

Tissue is progressing slowly and steadily and the demand from both the textile and shoe industries has materially strengthened. A feeling of greater firmness is evident in the market and merchants are receiving many inquiries.

Kraft wrapping papers have stiffened up to a slight degree during the past week although there have been no price alterations. Imported kraft is now quoted at 6.00 to 6.25 cents a pound and dealers are more optimistic.

Those board mills that have not had folding box board to fall back upon during the slump in this market have fared badly during the past few months, but the board situation has taken a turn for the better, according to many dealers, and with the rumor of several mills reopening confidence is being restored. Coal difficulties have hampered production, but mills find the greatest difficulty in disposing of their product. Folding boxboard is still in fair demand.

Mechanical Pulp

Keeping pace with the rapid consumption of news print, the groundwood market has enlivened appreciably. Larger orders are

continually coming in to dealers in this commodity, and buyers now appear to be convinced that the prices which are being quoted are fair ones and that the market is stable. As in the news print industry, it is doubtful whether or not there will be a noticeable let-up in the demand during the summer months, and if consumption continues to increase at the present rate, both manufacturers and merchants will have little about which to complain.

Chemical Pulp

The majority of those who handle this commodity are of the impression that if there is to be any change in the present quotations on chemical pulp it will be in the upward direction. Manufacturers have liquidated production costs to such an extent already that prices now quoted are considered as near rock bottom as present conditions will allow them to go. Many mills, acting under this belief, have contracted for supplies which will carry them over the coming year, and this confidence has, in itself, tended to strengthen the market and hold prices firm.

Old Rope and Bagging

The fact that several mills handling old rope and bagging have recently reopened gives evidence to the fact that this market is well on the way to recovery. Many were compelled to close down due to the surplus stocks on hand that could not be moved even at a losing figure. Dealers now report that a number of inquiries which they received have materialized into orders. The small quantities of rope which remained have been taken at a stiffer price, and Manila rope seems to be in good demand. Bagging is very slow in recuperating, however, and unsatisfactory packing is believed to be accountable for the loss of a goodly portion of this business.

Waste Paper

Mills are now actually experiencing difficulties in securing ample supplies of the better grades of waste papers. Production has not been keeping up with the demand for some time, and it is only when an attempt is made to purchase a dozen carloads of some such grade as soft white shavings that the change in the market becomes apparent. Kraft and manila cuttings are moving regularly but slowly while nearly every other grade has stiffened up materially in price, and packers are still unwilling to sell ahead in large quantities. Several of the largest dealers in waste papers have predicted that the present price advance is but the forerunner of a general amelioration of conditions in this market.

Rags

Prices on some grades of rags have stiffened slightly and the feeling which has been prevalent in the market during the past week is one of confidence. The demand for whites and bleachable grades of both new and old rags has continued unabated, and several dealers mentioned that some activity has started up in the lower grades. As was stated in this regard last week, the fact that roofing has taken a turn for the better is indicative of a pronounced alteration in the entire rag situation, as roofing has always been an indicative factor in the past. Dealers say that many inquiries are being received daily and that the size of orders is increasing.

Twine

No great change in either direction has been perceptible in the twine market during the past week and aside from the fact that it may be described as convalescent, it is by no means in a healthy condition. Prices have catapulted down to a ridiculously low level and still the demand is so spotty that a market is hardly demonstrated. Nominal prices are quoted and there is nothing firm about the present status of affairs. The fact that raw jute fiber had advanced somewhat several weeks ago is taken by some dealers as an indication that a general strengthening in other grades of twine was imminent. If this is the case, it has not yet become evident, as the price of nearly every grade of twine now on the market is not far enough above manufacturing cost to admit of any profit.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations May 29, 1922:

STOCKS.	BID.	ASKED.
American Writing Paper Company, pref.	34	34 1/2
International Paper Company, com.	52 1/2	53
International Paper Company, pref., stamped.	70	70 1/2
Union Bag & Paper Corporation.	65	67

Because of the unusual conditions prevailing in the various markets quotations are more or less nominal.

Paper	Domestic Rags
F. o. b. Mill.	New
Ledgers 10.50 @ 30.00	Prices to Mill, f. o. b. N. Y.
Bonds 8.50 @ 55.00	Shirt Cuttings—
Writings—	New White, No. 1 10.00 @ 10.50
Extra Superfine.. 14 @ 25	New White, No. 2 5.75 @ 6.25
Superfine 13 @ 20	Silesias, No. 1... 6.00 @ 6.50
Tub Sized..... 10 @ 16	New Unbleached. 8.50 @ 9.00
Engine Sized..... 9.00 @ 15.00	Washables 3.25 @ 3.50
News—f. o. b. Mill—	Fancy 4.75 @ 5.25
Rolls, contract... 3.50 @ 3.75	Cotton—according
Rolls, transit... 3.50 @	to Grades—
Sheets 4.00 @	Blue Overall 5.50 @ 6.00
Side Runs..... 3.25 @ 3.50	New Blue..... 4.00 @ 4.50
Book, Cased—f. o. b. Mill	New Black Soft. 3.00 @ 3.25
S. & S. C..... 6.25 @ 7.25	New Light Sec-
M. F. 6.00 @ 7.00	onds 2.75 @ 3.00
Coated and En-	O. D. Khaki Cut-
amel 8.00 @ 10.00	tings 3.25 @ 3.60
Lithograph 8.00 @ 10.00	Men's Corduroy.. 2.50 @ 2.75
Tissues—f. o. b. Mill	New Canvas..... 6.50 @ 7.00
White, No. 1..... .75 @ .80	New Black Mixed 2.25 @ 2.75
Colored 1.00 @ 2.00	Old
Anti-Tarnish .. .75 @ .80	White, No. 1—
Silver Tissue.... 1.50 @ 2.70	Repacked 5.50 @ 6.00
Manila ..... .75 @ .80	Miscellaneous .. 4.25 @ 4.75
Kraft—f. o. b. Mill—	White, No. 2—
No. 1 Domestic.. 7.00 @ 7.50	Repacked 2.75 @ 3.00
No. 2 Domestic.. 5.75 @ 6.25	Miscellaneous .. 2.00 @ 2.25
Imported 6.00 @ 6.25	St. Soiled White.. 1.15 @ 1.25
Screenings 2.50 @ 3.50	Thirds and Blues—
Manila	Repacked 1.50 @ 1.65
No. 1 Jute..... 8.50 @ 9.00	Miscellaneous .. 1.15 @ 1.20
No. 2 Jute..... 7.75 @ 8.50	Black stockings.. 2.25 @ 2.50
No. 1 Wood..... 4.50 @ 5.50	Cloth Strippings.. .90 @ 1.00
No. 2 Wood..... 4.00 @ 4.50	No. 1..... .90 @ 1.00
Butchers 4.25 @ 4.75	No. 2..... .80 @ .90
Fiber Papers—	No. 3..... .55 @ .65
No. 1 Fiber..... 6.00 @ 6.25	No. 4..... .55 @ .65
No. 2 Fiber..... 5.00 @ 5.25	No. 5A..... .90 nominal
Common Bogus.. 1.75 @ 2.25	Foreign Rags
Card Middles.... 4.00 @ 5.00	New Light Silesias. 6.00 nominal
Boards—per ton—	Light Flannelettes. 6.75 nominal
News 35.00 @ 45.00	Unbleached Cottons. 7.50 nominal
Straw 40.00 @ 45.00	New White Cut-
Chip 32.50 @ 40.00	tings 9.50 nominal
Binders' Board.. 60.00 @ 70.00	New Light Oxfords. 6.00 nominal
Sgl. Mla. Ll. Chip. 52.50 @ 62.50	New Light Prints.. 4.50 nominal
Wood Pulp..... 75.00 @ 90.00	New Mixed Cut-
Container 60.00 @ 70.00	tings 2.00 @ 2.50
Wax Paper—	New Dark Cuttings. 1.90 @ 2.10
Self Sealing White	No. 1 White Linens 9.00 @ 11.00
28 and 30 lb.	No. 2 White Linens 6.50 nominal
basis 10.00 @ 11.00	No. 3 White Linens 5.00 nominal
Waxed Tissue.... 1.40 @ 1.60	No. 4 White Linens 3.50 nominal
Glassine—	Old Extra Light
Bleached, basis 25	Prints 2.00 nominal
lbs. 12.75 @ 13.25	Ord. Light Prints. 1.75 nominal
Bleached, basis 20	Med. Light Prints. 1.50 nominal
lbs. 13.75 @ 15.25	Dutch Blue Cottons. 1.85 nominal
Mechanical Pulp	German Blue Cot-
(Ex-Dock.)	tons 1.50 nominal
No. 1 Imported.... 32.00 @ 36.00	Ger. Blue Linens.. 3.50 nominal
(F. o. b. Pulp Mills.)	Checks and Blues.. 1.50 nominal
No. 1 Domestic.... 29.00 @ 33.00	Dark Cottons..... 1.00 nominal
Chemical Pulp	Shoppery ..... .85 @ .90
(Ex-Dock, Atlantic Ports.)	French Blues..... 2.00 nominal
Sulphite (Imported)—	Bagging
Bleached 4.00 @ 4.50	Prices to Mill f. o. b. N. Y.
Easy Bleaching.. 2.85 @ 3.10	Gunny No. 1—
No. 1 strong un-	Foreign ..... .80 @ .85
bleached 2.50 @ 2.75	Domestic ..... .80 @ .85
No. 2 Strong un-	Wool, Tares, light. 1.00 @ 1.10
bleached 2.25 @ 2.50	Wool, Tares, heavy 1.10 @ 1.15
No. 1 Kraft..... 2.50 @ 3.00	Bright Bagging.... .90 @ 1.00
Sulphite 2.90 @ 4.00	No. 1 Scrap..... .80 @ .90
Bleached (F. o. b. Pulp Mill.)	Sound Bagging.... .75 @ .85
Sulphite (Domestic)	Manila Rope—
Bleached 4.00 @ 4.50	Foreign 4.60 @ 4.85
Strong unbleached. 2.60 @ 2.80	Domestic 4.75 @ 5.00
Easy Bleaching	New Bu. Cut..... 1.80 @ 1.90
Sulphite 2.60 @ 3.10	Hessian Jute Threads—
News Sulphite.... 2.50 @ 2.80	Foreign 4.25 @ 4.50
Masterlich 2.80 @ 3.10	Domestic 4.00 @ 4.25
Kraft (Domestic) 2.50 @ 3.00	Mixed Strings.... .75 @ .85
Soda Bleached.... 3.50 @ 3.75	Twines
	Cotton—(F. o. b. Mill)
	No. 1..... 32 @ 34
	No. 2..... 30 @ 32
	No. 3..... 26 @ 28

India, No. 6 basis—	17 @ 18
Light 17 @ 18	
Dark 38 @ 40	
B. C. 18 Basis.. 50 @ 60	
A. H. Italian, 18	
Basis 25 @ 26	
Finished Jute—	
Light, 18 basis.. 26 @ 28	
Dark, 18 basis.. 26 @ 28	
Jute Wrapping, 3-6	
Ply—	
No. 1..... 22 @ 23	
No. 2..... 30 @ 31	
Tube Rope—	
4-ply and larger. 14 @ 16	
Fine Tube Yarn—	
5-ply and larger. 18 @ 20	
4-ply 19 @ 21	
3-ply 20 @ 22	
Unfinished India—	
Basis 15 @ 16	
Paper Makers Twine	
Balls 12 @ 14	
Box Twine, 2-3 ply 16 @ 17	
Jute Rope 12 @ 14	
Amer. Hemp, 6... 32 @ 34	
Sisal Hay Rope—	
No. 1 Basis..... 14 @ 16	
No. 2 Basis..... 12 @ 14	
Sisal Lath Yarn—	
No. 1..... 13 @ 14	
No. 2..... 10 @ 12	
Manila Rope..... 17 @ 18	

Old Waste Papers

(F. o. b. New York)

Shavings—	
Hard, White, No. 1 3.75 @ 4.00	
Hard, White, No. 2 3.30 @ 3.55	
Soft, White, No. 1 3.25 @ 3.35	
Flat Stock—	
Stitchless 1.60 @ 1.75	
Over Issue Mag. 1.60 @ 1.75	
Solid Flat Book.. 1.50 @ 1.60	
Crumpled No. 1.. 1.15 @ 1.25	
Solid Book Ledger. 2.00 @ 2.25	
Ledger Stock 1.60 @ 1.70	
No. 1 White News 1.65 @ 1.75	
New B. B. Chips .50 @ .55	
Manilas—	
New Env. Cut.. 2.50 @ 2.75	
New Cut No. 1.. 1.60 @ 1.75	
Extra No. 1, Old 1.50 @ 1.60	
Print ..... .85 @ .95	
Container Board.. .60 @ .70	
Bogus Wrapper.. .55 @ .60	
Old Krafts, machine compressed	
Bales 1.60 @ 1.70	
News—	
Strictly Overissue .70 @ .80	
Strictly Folded.. .52 1/2 @ .57 1/2	
No. 1 Mixed Paper .45 @ .50	
Common Paper.... .32 1/2 @ .37 1/2	

CHICAGO

(FROM OUR REGULAR CORRESPONDENT.)

Paper	
F. o. b. Mill	
All Rag Bond..... 35 @ 40	
No. 1 Rag Bond... 30 @ 35	
No. 2 Rag Bond... 18 @ 20	
Water Marked Sul-	
phite 10 @ 14	
Sulphite Bond..... 9 @ 12	
Sulphite Ledger.... 12 @ 13	
Superfine Writing.. 18 @ 24	
No. 1 Fine Writing 14 @ 22	
No. 2 Fine Writing 12 @ 20	
No. 3 Fine Writing 8 @ 12	
No. 1 M. F. Book.. 6 1/2 @ 7	
No. 1 S. & S. C.	
Book 6 1/2 @ 7 1/2	
Coated Book..... 8 1/2 @ 10 1/2	
Coated Label..... 8 1/2 @ 10 1/2	
News—Rolls, mill. 3 1/2 @ 4 1/2	
News—Sheets, mill. 3 1/2 @ 4 1/2	
No. 1 Manila..... 5 1/2 @ 6	
No. 1 Fiber..... 5 @ 6	
No. 2 Manila..... 4 1/2 @ 5	
Butchers' Manila.. 4 @ 5	
No. 1 Kraft..... 7 @ 8	
No. 2 Kraft..... 6 @ 7	
Wood Tag Boards.. 4 @ 5	
Screenings 2 1/2 @ 3	
Boards, per ton—	
Plain Chip..... 35.00 @ 40.00	
Solid News..... 40.00 @ 45.00	
Manila Lined	
Chip 45.00 @ 52.50	
Container Line—	
85 Test 60.00 @ 65.00	
100 Test..... 65.00 @ 70.00	

Old Papers

Binders' Board..... 75.00 @ 80.00	
Solid Wood Pulp.. 80.00 @ 90.00	
Straw Board..... 35.00 @ 40.00	
Filled Pulp Board.. 55.00 @ 60.00	
Shavings—	
No. 1 hard White 3.25 @ 3.50	
No. 1 Soft Shaw. 3.00 @ 3.10	
No. 1 Mixed..... 1.10 @ 1.25	
No. 2 Mixed..... 1.00 @ 1.10	
White Envel. Cut-	
tings 3.25 @ 3.50	
Ledgers and Writ-	
ings 1.50 @ 1.75	
Solid Books 1.35 @ 1.50	
No. 1 Books, light.. .90 @ 1.00	
Blanks 1.75 @ 2.00	
Ex. No. 1 Manila.. 1.90 @ 2.00	
Manila Envelope	
Cuttings 2.00 @ 2.10	
No. 1 Manilla..... .90 @ 1.00	
Folders News (over	
issue) ..... .80 @ .85	
Old Newspaper.... .70 @ .75	
Mixed Papers..... .65 @ .70	
Straw Clippings.... .70 @ .75	
Binders Clippings.. .70 @ .75	
Kraft 1.75 @ 2.00	
New Kraft Cut.. 2.00 @ 2.10	
Roofing Stock, f. o. b.	
Chicago, Net Cash—	
No. 1 22.00 @ 24.00	
No. 2 20.00 @ 22.00	
No. 3 18.00 @ 20.00	
No. 4 18.00 @ 20.00	

PHILADELPHIA

(FROM OUR REGULAR CORRESPONDENT.)

Paper	
Bonds 10 @ .60	
Ledgers 15 @ .40	
Writings—	
Superfine 15 @ .20	
Extra fine..... 12 @ .22	
Fine 20 @ .30	
Fine, No. 2 20 @ .25	
Fine, No. 3..... 15 @ .20	
Book, M. F..... .06 @ .09	
Book, S. S. & C.. .08 @ .15	
Book, Coated..... .08 @ .15	
Coated Lithograph.. .10 @ .15	
Label ..... .08 @ .15	
News ..... .05 @ .07	
No. 1 Jute Manila.. 12 @ .13	
Manila Sul., No. 1. .08 @ .08 1/2	
Manila No. 2..... .07 1/2 @ .08	
No. 2 Kraft..... — @ .08 1/2	
No. 1 Kraft..... — @ .09 1/2	
Common Bogus.... .02 1/2 @ .03	
Straw Board..... 35.00 @ 45.00	
News Board..... 32.50 @ 35.00	
Chip Board..... 27.50 @ 32.00	
Wood Pulp Board.. 90.00 @ 100.00	
(Carload Lots)	
Binder Boards—	
Per ton..... \$65.00 @ 75.00	
Carload lots..... 60.00 @ 65.00	
Tarred Felts—	
Regular 48.00 @ 50.00	
Slaters 54.00 @ 56.00	
Best Tarred, 1-ply	
(per roll) 1.35 @ 1.50	
Best Tarred, 2-ply	
(per roll) 1.00 @ 1.15	
Best Tarred, 3-ply 1.50 @ 1.65	
Bagging	
F. o. b. Phila.	
Gunny No. 1—	
Foreign ..... .75 @ .80	
Domestic ..... .70 @ .75	
Manila Rope..... 4.00 @ 4.50	
Sisal Rope..... .75 @ .80	
Mixed Rope..... .75 @ .80	
Scrap Burlaps.... 1.00 @ 1.25	
Wool Tares, heavy. 2.50 @ 2.75	
Mixed Strings.... .75 @ .80	
No. 1, New Lt. Bur-	
lap ..... .75 @ .80	
New Burlap Cut-	
tings 1.75 @ 2.10	
Old Papers	
F. o. b. Phila.	
Shavings—	
No. 1, Hard	
White 3.50 @ 3.75	
No. 2, Hard	
White 3.00 @ 3.25	
No. 1 Soft White 3.00 @ 3.25	
No. 2 Soft White 1.75 @ 2.00	
No. 1 Mixed..... 1.50 @ 1.75	
No. 2 Mixed..... 1.00 @ 1.25	

(Continued on page 66)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MAY 27, 1922

SUMMARY

News print	188 rolls
Packing paper	30 cs.
Printing paper	118 rolls, 5 cs.
Cigarette paper	130 cs.
Letter paper	7 cs.
Parchment paper	27 cs.
Photo paper	30 cs.
Wall paper	7 cs.
Litho paper	10 cs.
Drawing paper	17 cs.
Filter paper	1 cs.
Wrapping paper	1,172 rolls, 1,513 bls.
Blueprint paper	51 rolls
Miscellaneous paper	169 cs., 14 bls.

CIGARETTE PAPER

P. J. Schweitzer, Canada, Marseilles, 56 cs.
British-American Tobacco Company, Adriatic, Liverpool, 10 cs.
Rose & Frank, Independence Hall, Havre, 12 cs.
American Tobacco Company, by same, 52 cs.

LETTER PAPER

I. Bamberger Company, Rochimbeau, Havre, 7 cs.

PARCHMENT PAPER

Irving National Bank, Finland, Antwerp, 27 cs.

PHOTO PAPER

Gevaert Company of America, Inc., Finland, Antwerp, 30 cs.

WALL PAPER

R. Krause & Son, Finland, Antwerp, 3 cs.
J. L. Vandiver, Hudson, Havre, 4 cs.

LITHO PAPER

Arnhold Brothers & Co., Dacre Castle, Shanghai, 10 cs.

DRAWING PAPER

H. Reeve, Angel & Co., Westerdijk, Rotterdam, 6 cs.
Keuffel & Esser, Bayern, Hamburg, 11 cs.

FILTER PAPER

H. Reeve, Angel & Co., Westerdijk, Rotterdam, 1 cs.

WRAPPING PAPER

Blauvelt Wiley Paper Manufacturing Company, Falco, Gothenburg, 78 rolls.
Whiting & Patterson, by same, 10 bls.
Wilkinson Brothers & Co., Inc., by same, 678 bls., 990 rolls.
D. S. Walton & Co., by same, 124 bls.
M. O'Meara Company, by same, 130 bls.
C. F. Hubbs & Co., by same, 35 bls.

Irving National Bank, United States, Copenhagen, 28 bls.
Wilkinson Brothers & Co., Inc., by same, 417 bls.
E. C. Melby, by same, 61 bls., 104 rolls.

NEWS PRINT

Chemical National Bank, Orduna, Hamburg, 188 rolls.

BLUEPRINT PAPER

Keuffel & Esser, Bayern, Hamburg, 51 rolls.

PACKING PAPER

Steiner Paper Company, Bayern, Hamburg, 30 cs.

PRINTING PAPER

F. G. Prager Company, Finland, Antwerp, 118 rolls, 5 cs.

PAPER

P. C. Zuhlke, Finland, Antwerp, 47 cs.
C. H. Roulin, Canada, Marseilles, 15 cs.
U. S. Forwarding Company, Manchuria, Hamburg, 11 bls.
Rose & Frank, Ind. Hall, Havre, 14 cs.
A. B. Newman, Bayern, Hamburg, 3 cs.
Marco Zum, Conte Rosso, Genoa, 90 cs.

RAGS, BAGGING, ETC.

Castle, Gottheil & Overton, Galileo, Antwerp, 37 bls., rags.
Castle, Gottheil & Overton, Rochambeau, Havre, 54 bls., bagging.
Stine Brothers & Sherwin Company, by same, 11 bls., rags.
G. W. Millar & Co., Westerdijk, Rotterdam, 2 bls., rags.
R. F. Downing & Co., Inc., by same, 105 bls., rags, 201 bls., bagging.
Rudolph Wolf, by same, 56 bls., rags.
Castle, Gottheil & Overton, by same, 1 bl., rags.
American Wood Pulp Corporation, Bayern, Hamburg, 268 bls., rags.
F. J. Keller Company, Inc., by same, 27 bls., rags, 13 bls., new cuttings.
Meyers, Lipman, Woolstock Company, by same, 43 bls., rags.
Muttick Brothers, by same, 47 bls., rags.
Goldman, Sachs & Co., by same, 167 bls., rags.
Guaranty Trust Company, Finland, Antwerp, 150 bls., flax waste.
B. D. Kaplan, Adriatic, Liverpool, 611 bls., rags.
Equitable Trust Company, by same, 604 bls., rags.
J. Spunt & Co., Dacre Castle, Shanghai, 239 bls., cotton waste.
Castle, Gottheil & Overton, Hudson, Havre, 55 bls., new cuttings, 233 bls., rags.
F. J. Keller Company, Inc., by same, 651 bls., rags.

OLD ROPE

Brown Brothers & Co., City of Lincoln, Hull, 171 coils.
Irving National Bank, United States, Copenhagen, 175 coils.
American Exchange National Bank, Southwestern Miller, London, 100 coils.

First National Bank of Boston, Finland, Antwerp, 169 coils.
First National Bank of Boston, Westerdijk, Rotterdam, 73 coils.

CASEIN

T. M. Duhe & Sons, East Side, Bordeaux, 248 bags.

WOOD PULP

I. Anderson & Co., United States, Copenhagen, 150 bls.
M. Gottesman & Co., Inc., Georgia, Sebenico, 4,000 bls.
H. Hollesen, President Tall, Bremen, 102 bls.
Tidewater Papermills Company, H. D. McLean, Liverpool, N. S., 8,210 bls., 821 tons.
Kelly & Co., C. F. Gordon, Liverpool, N. S., 7,700 bls., 770 tons.

BOSTON IMPORTS

WEEK ENDING MAY 27, 1922

R. T. Hammond, America, Bremen, 500 bls., 100 tons wood pulp.
Burton & Bolousky, Rochambeau, Havre, 40 bls., rags.

PORTLAND IMPORTS

WEEK ENDING MAY 27, 1922

Poland Paper Company, Falco, Gothenburg, 6,456 bls., wood pulp.

BALTIMORE IMPORTS

WEEK ENDING MAY 27, 1922

American Wood Pulp Corporation, Falco, Gothenburg, 2,100 bls., 304 tons wood pulp.
Johanson & Co., by same, 3,585 bls., 635 tons wood pulp.
Scandinavian American Trading Company, by same, 1,270 bls., 254 tons wood pulp.
Borregaard Company, by same, 1,200 bls., wood pulp.
J. Anderson & Co., by same, 600 bls., wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING MAY 27, 1922

Baring Brothers & Co., Southwestern Miller, London, 434 bls., rags.

Receiver Named for W. Whitmer & Sons

PHILADELPHIA, May 26, 1922.—Federal Judge Thompson today appointed A. J. Stevens receiver in equity for William Whitmer & Sons, Inc., a \$3,000,000 lumber concern which, through nine subsidiaries, owns and operates extensive timber lands, pulp and lumber mills in Virginia, West Virginia, North Carolina and elsewhere.

The principal subsidiary of the Whitmer company, the Parsons Pulp & Lumber Company, was placed in the hands of a receiver by Judge Thompson a few days ago.

The bill in equity contains no statement of the assets and liabilities of the concern, but it is declared Whitmer & Sons is solvent, but temporarily embarrassed by lack of operating capital. The receivership is a friendly one, it was said, and was deemed advisable for a quick rehabilitation of the company.

Atlantic Paper & Pulp Co. Burned

SAVANNAH, Ga., May 29, 1922.—Fire, said to have been caused through a stroke of lightning, damaged the plant of the Atlantic Paper and Pulp Company last week, to an extent exceeding \$50,000, according to estimates of the officials of the company.

The buildings destroyed were the lime shed and storage building, the main building containing the wood reducing machinery being saved. The fire is said to have originated when the lightning struck a tree nearby and, following along an electric cable, entered by the cable chute and set fire to the shed.

I. H. Fetty, who is president of the Atlantic Paper and Pulp Corporation was in New York city at the time of the fire and wires were sent to him last night apprising him of the loss.

According to officials of the company the plant will be forced to close down for a time.

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Members New York Stock Exchange
Members New York Cotton Exchange

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Tel. Rector 1140

Branch Office
41 East 42nd Street
Tel. Murray Hill 5631

St. Louis Southwestern Ry. Co.

1st Cons. Mort. 4% 1932
To Yield About 7.35%
to Maturity

Descriptive circular upon request

MG. SULPHITE PAPER

Pure or mixed with any percentage of Mechanical Wood Pulp.

Basis 24 x 36" --10 lbs. to 60 lbs,

Highest Quality at Lowest Market Prices.

*For Samples and Quotations
Kindly Apply to*

FERNSTROM PAPER CO., Inc.

Scandinavian Paper Mills' Representatives
150 Nassau Street New York City
Telephone: Beekman 5891
Also at
LONDON STOCKHOLM SAN FRANCISCO

Manufacture of Pulp and Paper

IN FIVE VOLUMES

Being prepared by the Joint Committee on Vocational Education of the Pulp and Paper Industry.

Volumes I, II and III now issued.

Volumes IV and V are expected during the year.

The work is adapted to the classroom, to home study and for use as a reference work. Every firm and individual connected with the industry or interested in the pulp and paper business should own one of these sets.

The volumes issued are on sale at \$5.00 a volume and orders should be placed with the Technical Association of the Pulp and Paper Industry, 18 East 41st Street, New York, N. Y.

June 1



EVERYTHING IN

PULP & PAPER

J. E. PATTON CO., INC.

342 Madison Ave.
New York City

(Cable address - Pulp.N.Y.)



Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, May 31, 1922.

ALUM.—The demand for all grades of alum continues to be somewhat slack, but there are ample evidences that the market is attaining a surer footing. Lump is quoted at 350 cents a pound, ground at 365 and powdered at 390.

BLEACHING POWDER.—While bleach is still being quoted by many dealers at the figure of 160 cents a pound, it is generally felt that this price can be bettered for large spot quantities. Paper manufacturers are not requiring any great amount of the product at this time, and no drastic change in the status of the market is anticipated until the usual summer depression has come and gone.

BLANC FIXE.—Practically no change have been evident in this market during the past week with the exception of the fact that demand has been slowly and regularly increasing. The quotations given on the product appear to be quite firm, \$40 to \$50 per ton being the price of the pulp, depending upon quality and quantity, and 3.50 to 3.75 cents a pound being the quoted price on dry.

CASEIN.—Heavy competition for the small Argentine supply available has caused the market for casein to firm considerably. Added to this, the fact that the product was taken off the free list last week by the Senate in the new tariff bill and a duty imposed, should have a strengthening effect upon the market. Europe is now consuming the greater part of Argentine's supply of this product and at prices American buyers cannot afford to pay. While it is still holding at 10.00 cents a pound, New York, merchants are not too anxious to sell at this figure.

CAUSTIC SODA.—Foreign demand for caustic soda is still on the increase. Domestic prices average 326 cents a pound, works, and this figure is not expected to vary much in the near future, according to dealers.

CHINA CLAY.—With considerable clay on the ground in Europe, the demand in this country is still insufficient to take care of England's production although there is a steady activity. These clays are quoted at \$13 to \$18 a ton, while domestic washed are priced at \$8 to \$10 and the unwashed at \$6 to \$8.

LIQUID CHLORINE.—Tank-car lots of chlorine are being quoted at a considerably lower figure than the 5.50 to 7.00 cents a pound which is asked for the product in cylinders of 100 pounds. Activity is light but regular.

ROSIN.—With a steady increase during the past week in the demand, both foreign and domestic, for grades E, F and G, the rosin market continues firm at the price of \$5.20 for barrels of 280 pounds.

SALTCAKE.—Slack acid production is still proving a check on the manufacture of saltcake, and this has tended to give prices an appearance of firmness. Chrome cake is quoted at \$18 a ton and acid cake at \$20 to \$21.

SATIN WHITE.—This commodity continues in the same good demand as blanc fixe and quotations from dealers average 1.50 cents a pound, contract.

SULPHUR.—While many consumers have taken advantage of the lower rates on water shipments of brimstone, the demand has not increased appreciably. Quotations on the ground range from \$15 to \$17 per ton and f. o. b. New York, from \$18 to \$20.

STARCH.—Considerable activity is still apparent in the starch market, the paper maker's grade being quoted at 2.47 and 2.75 cents a pound for bag and barrel quantities, respectively. Pearl starch is now listed at 2.37 and 2.65 cents for these amounts, contract.

SULPHATE OF ALUMINA.—The demand is still a little spotty in the aluminum sulphate market, and the Western invasion of low quotations has somewhat demoralized the situation. Iron free is selling for 2.15 to 2.35 while the plain sulphate is quoted at 1.40 to 1.50 cents a pound.

Market Quotations

(Continued from page 63)

Solid Ledger Stock.	2.00	@	2.25	New Black Soft.	.03	@	.03 1/4
Writing Paper.....	1.80	@	2.00	New Light Sec.			
No. 1 Books, heavy.	1.50	@	1.75	Books.....	.02	@	.02 1/4
No. 2 Books, light.	1.20	@	1.50	Khaki Cuttings...	.02 1/4	@	.03 1/4
No. 1 New Manila..	2.75	@	3.00	Corduroy.....	.02	@	.02 1/4
No. 1 Old Manila..	1.50	@	1.75	New Canvas.....	.07	@	.07 1/4
Container Manila..	1.00	@	1.10	New Black Mixed	2.75	@	3.00
Old Kraft.....	1.90	@	2.00	Old			
Overissue News...	.75	@	.80	White, No. 1—			
Old Newspaper...	.50	@	.60	Repacked.....	.06	@	.06 1/4
No. 1 Mixed Paper.	.45	@	.50	Miscellaneous...	.04 1/4	@	.04 1/2
Common Paper...	.40	@	.50	White, No. 2—			
Straw Board, Chip.	.40	@	.45	Repacked.....	.03	@	.03 1/4
Binders' Bd. Chip.	.40	@	.45	Miscellaneous...	.02 1/4	@	.02 1/2
Domestic Rags—New.				Thirds and Blues—			
Price to Mill, f. o. b. Phila.				Repacked.....	1.65	@	1.80
Shirt Cuttings—				Miscellaneous...	1.40	@	1.55
New White, No. 1	.09 1/4	@	.09 1/4	Black Strickings...	1.75	@	2.25
New White, No. 2	.05	@	.06	Roofing Stock—			
Silesias, No. 1...	.04 1/4	@	.05	No. 1.....	.90	@	1.00
New Unbleached...	.08 1/4	@	.08 1/4	No. 2.....	.80	@	.90
Washables.....	.03	@	.03 1/4	No. 3.....	.70	@	.80
Fancy.....	.04 1/4	@	.05	No. 4.....	.70	@	.80
Cottons—according to grades—				No. 5A.....	nominal		nominal
Blue Overall.....	.04	@	.04 1/4	B.....	nominal		nominal
New Blue.....	.02	@	.02 1/4	C.....	nominal		nominal

BOSTON

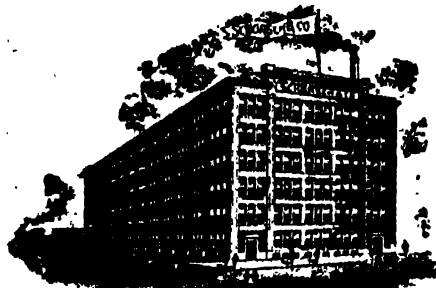
[FROM OUR REGULAR CORRESPONDENT.]

Paper				Wood, Vat Lined	47.00	@	
Bonds.....	.06 1/4	@	—	Filled News Board.	37.50	@	
Ledgers.....	.07 1/4	@	.09	Solid News Board.	42.00	@	45.00
Writings.....	.11 1/4	@	.13	S. Manila Chip...	52.50	@	
Superfine.....	.11 1/4	@	.13	Pat. Coated.....	70.00	@	75.00
Fine.....	.08 1/4	@	.09 1/4				
Books, S. & S. C.	.06	@	.07	Old Papers			
Books, M. F.....	.05 1/4	@	.06 1/4	Shavings—			
Books, coated.....	.07 1/4	@	.08 1/4	No. 1 Hard White	3.50	@	3.75
Label.....	.08	@	.08 1/4	No. 1 Soft White	3.00	@	3.25
News sheets.....	3.05	@	—	No. 1 Mixed.....	1.50	@	1.75
News, rolls.....	3.75	@	4.00	Ledgers & Writings	.03 1/4	@	—
Manilas.....				Solid Books.....	1.75	@	2.00
No. 1 Manila.....	\$6.75	@	—	Blanks.....	1.30	@	1.45
No. 1 Fibre.....	6.00	@	6.25	No. 2 Books Light.	.60	@	.70
No. 1 Jute.....	8.50	@	9.00	Filled News, over-			
Kraft Wrapping...	7.00	@	—	issues.....	\$11.25	@	12.50
Common Bogus.....	3.00	@	—	Mixed paper.....	47.50	@	50.00
Boards				Gunny Bagging...	.70	@	.75
(Per Ton Destination)				Manila Rope.....	4.25	@	4.50
Chip.....	\$33.50	@	—	Common Paper...	.35	@	.40
News, Vat Lined	35.00	@	37.50	Old News.....	.80	@	—
				Old Kraft.....	1.75	@	1.80

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

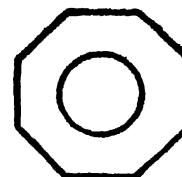
Paper				Sulphite, bleached..	90.00	@	95.00
(Mill Prices to Jobbers f. o. b. Mill)				Sulphate.....	70.00	@	—
Bond.....							
Sulphite.....	.11	@	.12 1/4	Old Waste Papers			
Light tinted.....	.12	@	.13 1/4	(In carload lots, f. o. b. Toronto)			
Dark tinted.....	.13 1/4	@	.15	Shavings—			
Ledgers (sulphite).	.13	@	.13	White Env. Cut...	3.75	@	—
Writing.....	.10 1/4	@	.13 1/4	Soft White Book			
News, f. o. b. Mills				Shavings.....	3.25	@	—
Rolls (carloads).	3.50	@	—	White Bl'k News.	1.60	@	—
Sheets (carloads).	—	@	4.25	Book and Ledger—			
Sheets (2 tons or				Flat Magazine and			
over).....	—	@	4.50	Book Stock (old)	1.45	@	—
Book—				Light and Crum-			
No. 1 M. F. (car-				pled Book Stock	1.30	@	—
loads).....	9.50	@	—	Ledgers and Writ-			
No. 2 M. F. (car-				ings.....	1.80	@	—
loads).....	8.50	@	—	Solid Ledgers...	1.80	@	—
No. 3 M. F. (car-				Manilas—			
loads).....	8.00	@	—	New Manila Cut.	1.90	@	—
No. 1 S. C. (car-				Printed Manilas...	.90	@	—
loads).....	10.00	@	—	Kraft.....	2.25	@	—
No. 2 S. C. (car-				News and Scrap...	.90	@	—
loads).....	9.00	@	—	Strictly Overissue	.80	@	—
No. 1 Coated and				Folded News...	.80	@	—
litho.....	15.00	@	—	No. 1 Mixed Pa-			
No. 2 Coated and				pers.....	.60	@	—
litho.....	14.00	@	—	Domestic Rags—			
No. 3 Coated and				Price to mills, f. o. b. Toronto			
litho.....	13.25	@	—	Per lb.			
Coated and litho,				No. 1 White shirt			
colored.....	15.25	@	—	cuttings.....	.09 1/4	@	.10
Wrapping—				No. 2 White shirt			
Grey.....	4.50	@	—	cuttings.....	.05 1/4	@	.05 1/4
White Wrap.....	5.00	@	—	Fancy shirt cut-			
"B" Manila.....	5.50	@	—	tings.....	.04 1/4	@	.04 1/4
No. 1 Manila.....	6.75	@	—	No. 1 Old whites	.04	@	—
Fibre.....	6.75	@	—	Thirds and blues	.02	@	.02 1/4
Kraft, M. F.....	8.00	@	—	Per cwt.			
M. G.....	8.15	@	—	Black stockings..	1.75	@	1.85
Pulp				Roofing stock:			
(F. o. b. Mill)				No. 1.....	1.35	@	—
Ground wood.....	\$25.00	@	32.50	No. 2.....	1.30	@	—
Sulphite any bleach-				Roofing stock:			
ing.....	60.00	@	65.00	No. 1.....	.04 1/4	@	.04 1/4
Sulphite news grade.	50.00	@	60.00	No. 2.....	.01 1/4	@	—
				Gunny bagging...	1.60	@	1.85

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132ND TO 133RD ST & BROOK AVE

PAPER BAGS

Sacks and Specialties

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SCHORSCH & CO.*Manufacturers***500 East 133d Street : New York**This Registered Trade
Mark Octagonon a Paper
Bag Vouches for
Its Good Quality

Claflin Continuous Beaters

Have no superior for

Paper or Boards

The CLAFLINS now in use have demonstrated the fact that they will do better BEATING, BRUSHING and REFINING, using $\frac{1}{4}$ the floor space, $\frac{1}{4}$ the power and $\frac{1}{4}$ the COST of any other type of beater in use today.

*Let us figure on your next installation.***THE CLAFLIN ENGINEERING CO.**

LANCASTER.

OHIO

5

“DRAPER” FELTS

*For Any Grade of Paper or Pulp***ARE GUARANTEED***To Give Entire Satisfaction*

MANUFACTURED BY

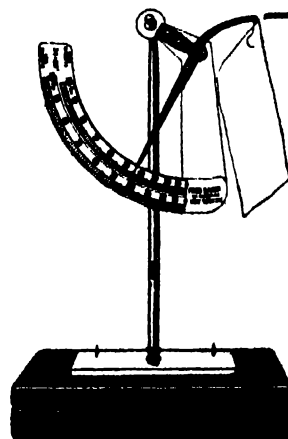
DRAPER BROS. CO., CANTON, MASS.

NORWOOD PAPER FINISHING MACHINERY

*Write for Information***NORWOOD ENGINEERING CO.**

Florence, Mass., U. S. A.

7

**MADE IN U. S. A.**

The Baker Universal Paper Scale

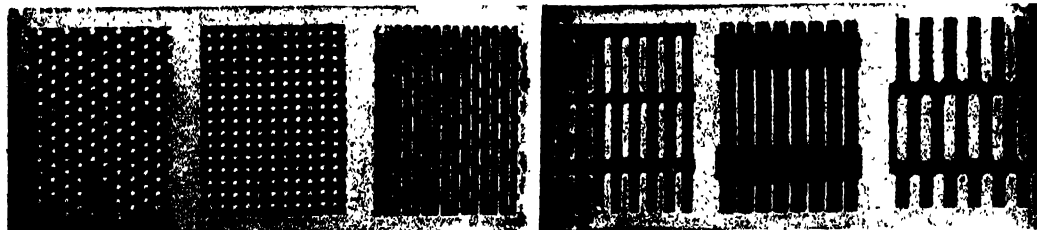
Collapseable, for Desk or Pocket. Set up stands 8 inches high, folded it measures 4x6 inches (coat pocket size). A small piece of paper indicates automatically team weights per 480 and 500 sheets in sizes 24x36, 20x30, 17x22, 25x38, or any size desired. A scale for every purpose.

FRED BAKERManufacturer of Precision Paper Scales
34 West 28th St., New York City

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PERFORATED METALS

*All sizes
and
shapes
of Holes**All kinds
and
thicknesses
of Metal*

For Centrifugal and Rotary Screens, Drainer Bottoms, Filter Plates, Pulp Washers, etc.

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WANT AND FOR SALE ADVERTISEMENTS

CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, \$1.00.

SITUATION WANTED, 4 cents a word for first insertion and 3 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED—Boss finisher, mill making high grade bonds and ledgers; located Western Massachusetts. In replying give age, experience and references. Address, Box 5073, care Paper Trade Journal. Je-8

MACHINE DESIGNER WANTED: One having experience in designing pulp screens, thickeners and wet machines preferred. Plant located half way between Boston and Providence. Address, Box 5042, care Paper Trade Journal. Je-8

WANTED at once. Draftsman, experienced in paper machine design. State full particulars, experience and salary expected. None but experienced men need apply. Address, Box 5092, care Paper Trade Journal. Je-1

WANTED: One good steady Fourdrinier Machine Tender used to running light weight bond. Married man preferred. Address, Box 5104, care Paper Trade Journal. Je-8

WANTED: Boss finisher and shipping clerk for 3-machine mill-making Sulphite Specialties, state age and experience. Good location. No labor trouble. Only competent men need apply. Address, Box 5108, care Paper Trade Journal. Je-1

POSITION OPEN for first class assistant superintendent in mill making Book Papers, also operating Groundwood Mill in connection therewith. Only a man who has had experience in both lines and understands the handling of help will be considered. All letters treated confidentially. Address, Box 5110, care Paper Trade Journal. Je-8

WANTED: First class thoroughly experienced machine tender for modern mill. One with experience on M.G. Tissue and light weight papers preferred. Give full details of qualifications, experience and reference in first letter. Address, Box 5111, care Paper Trade Journal. Je-8

WANTED: Two first class machine tenders and two beater engineers for book and railroad writing mill on Pacific Coast. None but A-1 men need apply. Send references in first letter. Address, Box 5112, care Paper Trade Journal. Je-8

WANTED: Experienced man on Langston corrugator. Must be familiar with asbestos paper. Address, Box 5121, care Paper Trade Journal. Je-1

WANTED—First class super calender man. Good pay for right party. Address, Box 5125, care Paper Trade Journal. Je-8

WANTED: One calender man on glassine and book papers. Good pay to right party. State whether married or single. Previous employment. All correspondence treated confidentially. Address, Box 5126, care Paper Trade Journal. Je-15

OPPORTUNITY: A rare opening for an experienced man as assistant to general manager of large Box Board Mill. A thorough knowledge of up-to-date costs necessary but not a part of the job. Address, Box 5127, care Paper Trade Journal. Je-8

HELP WANTED

WANTED: Clay Coated Board Salesman who has had practical experience in mill as well as sales experience. Good position open for right man. Address, Box 5128, care Paper Trade Journal. Je-8

WANTED: Experienced Machine Tender. Cylinder Machine. Tissue Mill. Give references. Address, Box 5130, care Paper Trade Journal. Je-8

WANTED: Good, steady reliable tyer for tying paper in a finishing room. Mill located in the West. Steady work. Address, Box 5131, care Paper Trade Journal. Je-1

WANTED: Boss Machine Tender and Beater Engineer for Mill making container board. Must be A-1 man, strictly sober and reliable. None other need apply. State wages and references in first letter. Address, Box 5136, care Paper Trade Journal. Je-15

WANTED: Responsible Paper Salesman with established following in converting and large consuming trade; New York and vicinity. Reply with full particulars. Address, Box 5137, care Paper Trade Journal. Je-8

WANTED: Outside Paper Salesman, prefer one familiar with fine papers. State experience, where, when and with whom employed. Address, C. F. Earl, care M. J. Earl, Reading, Pa.

NIGHT SUPERINTENDENT wanted for one machine board mill manufacturing .009 straw and straw board and chip board for set-up box work. Middle aged married man preferred. State salary and also references in your first letter. Mill located in the South. Address, Box 5138, care Paper Trade Journal. Je-22

WANTED—Machine Tender for 120-inch Fourdrinier machine making Dry and Water Finish Fibres. Address, Box 5146, care Paper Trade Journal. Je-1

WANTED: Experienced and reliable Toilet Paper Machine Operator. Steady position. Good pay. Address, Box 5141, care Paper Trade Journal. Je-1

BOARD MILL SUPERINTENDENT

required for Mill in England. 3 multi-cylinder Beloit Machines. Must be capable of taking charge of mechanical and power side (steam and electrical), as well as the manufacturing. State experience fully and give particulars regarding salary, age, family, etc. Apply marked, "PRIVATE," Thames Paper Co., Purfleet, Essex, England.

Je-8

HELP WANTED

WANTED: First Class Back Tender for News Machine; Feed, six fifty per minute. Wages, 97 cents per hour. Have references and don't write unless you can do the work. Good mill and good town in Michigan. Address, Box 5142, care Paper Trade Journal. Je-8

SITUATIONS WANTED

WANTED: By reliable party good paper jobbing business requiring \$25,000 to \$50,000 investment. All communications held confidential. Address, Box 5129, care Paper Trade Journal.

POSITION WANTED by practical paper maker and mechanic and good organizer. What kind of position have you to offer? Address, Box 5079, care Paper Trade Journal. Je-2

PAPER SALESMAN in New York City who can produce a large volume of business with adequate co-operation, desires connection. Drawing account on Commission basis. Correspondence invited. Address, Box 4635, care Paper Trade Journal. Je-1

WANTED POSITION—As superintendent. Twenty-one years' experience; used to Specialties, Colors and Wrapping, all grades of Boards and Fibres. Knows how to handle help. Can keep up repairs. Used to Fourdrinier and Cylinder Machines. Address, Box 4786, care Paper Trade Journal. Je-1

DOES YOUR MILL pay? If not, why not have a superintendent with proven ability and experience that will make it pay? Address, Box 4977, care Paper Trade Journal. Je-2

SUPERINTENDENT of ability open for position with good company making box board, container board, wall board, Bristol board or straw. A man that understands a plant thoroughly and gets good results. Address, Box 4987, care Paper Trade Journal. Je-3

MASTER MECHANIC desires position. Twenty years' experience in mills of all grades of paper and pulp, also on steam, water and electric power. Best references. Address, Box 5014, care Paper Trade Journal. Je-16

WANTED—Position as superintendent. Twenty-five years' experience on book, coating, hanging, and tissue papers. Familiar with rag, wood, jute, and old paper stock. Fourdrinier and cylinder machines. Address, Box 5087, care Paper Trade Journal. Je-2

EXPERIENCED BOSS BEATERMAN and color man wants position. Twenty-five years' experience with leading and largest mills making most all grades and colors. Best references. Address, Box 5054, care Paper Trade Journal. Je-1

BEATER ENGINEER: Open for position. Experienced on all grades of Box Boards, tests, etc. also bonds, ledgers and book. Address, Box 5068, care Paper Trade Journal. Je-1

EXECUTIVE with managerial ability, trained office manager, accountant and cost expert, student of Walton School of Commerce, Alexander Hamilton Institute and Industrial Extension Institute; specially experienced in paper mill administrative problems, seeks position of trust and responsibility. Highest references given. Address, E. J. B., P. O. Box 760, Cincinnati, Ohio. Je-8

SUPERINTENDENT of ability open for position June 1. High grade man on Kraft and Specialties. I have the ability plus a determined desire to work and make every effort to develop my opportunities. Address, Box 5099, care Paper Trade Journal. Je-1

SITUATIONS WANTED

WANTED position as superintendent or assistant superintendent, 19 years' experience on box board and container board. Good on repairs and can get results. Good references. Address, Box 5052, care Paper Trade Journal. Je-8

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. Je-1

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Two men with many years of experience in rebuilding and bringing mills up highest efficiency. If you require the best that practical experience and training can give. It is at your disposal on a salary basis; on salary and a percentage of net profits on increased production. If your mill is not on a paying basis, write us at once. Our experience covers the following on cylinder machines. Boards: Test, fancy box, single and double patent coated; Jute, chip (fancy and plain, single manilla lined, bleached manilla lined); Tag (Oak, manilla and filler folder); and milk bottle cap. Specialties: Albums, Kodak, Book Covers, Electric Papers, Socket and Shell Papers, Battery Boards, Bristols (solid index and filler); Paraffin papers and wrappings. We have intimate knowledge of raw material markets and can furnish the best of skilled help. Address, Box 5115, care Paper Trade Journal. Je-8

A THOROUGH PAPERMAKER with twenty-eight years manufacturing experience, considerable wholesale and jobbing experience desires to connect with some good house as manager or buyer, high grade references furnished on request. Address, Box 5116, care Paper Trade Journal. Je-8

SUPERINTENDENT of many years' experience in producing Box Boards is seeking a connection where quantity and quality production at a minimum cost will be recognized. Have best of references, for efficiency and maintaining harmony among employees. Address, Box 5117, care Paper Trade Journal. J1-13

TECHNICAL MAN with practical operation experience in Soda Pulp manufacture is open for engagement. Has developed technical control methods on mill operations and supervised the recovery of pulp making chemicals. Details furnished on inquiry. Good references. Address, Box 5122, care Paper Trade Journal. Je-8

EXPERIENCED MECHANICAL ENGINEER seeks new connection Paper or Pulp mill. Capable and with record of maintenance at low cost. Familiar with foreign Mills operations. Best references. Address, Box 4981, care Paper Trade Journal. Je-1

SUPERINTENDENT now employed as such work who had practical experience on Cylinder, Harper, Fourdrinier and Combination machines, well posted on nearly all grades of paper, also practical experience on ground wood and sulphite, also mill construction and upkeep of same. Past records show good results. Would prefer commission proposition, also invest capital with reputable company. Address, Box 5132, care Paper Trade Journal. Jy-6

AN EXPERIENCED ACCOUNTANT wants to locate with live paper mill or box concern. Employed at present, but has best of reasons for desiring new connection that promises a future. Young married man with family, but will consider any location that offers advantages. Address, Box 5133, care Paper Trade Journal. Je-8

POSITION WANTED: Inside, Paper House or Mill Agency, by man with considerable experience with printing papers. Has also been selling and is acquainted with trade in New York. Will start at a small salary. Address, Box 5139, care Paper Trade Journal. Je-8

UNIVERSITY GRADUATE with several years' paper mill experience wishes position with future. Will do anything, go any place. Address, Box 5140, care Paper Trade Journal. Je-8

SITUATIONS WANTED

I HAVE about twelve years' experience in Toilet Paper, Towel and Napkin business. Practical experience in converting and printing departments and thoroughly familiar with all work and machinery. Am capable office man, experienced shipping and billing clerk. Traffic manager and sales manager. Have about five years' traveling experience covering the southern portion of the United States from Maryland to California. Also familiar with exports to the Latin Americas. Twenty-eight years of age. Desires position preferably "inside" with actual manufacturer, and one who would be interested in developing my towel and napkin cabinet, which is entirely different and much simpler than any on the market. Address, Box 5114, care Paper Trade Journal. Je-1

YOUNG MAN, 25, married, wishes to connect with Paper Mill. Has had experience in Paper Mill cost accounting, payrolls and mill systems, also selling experience. At present calling on printers and publishers. Feels qualified to fill almost any inside position or be useful in Sales Department. Address, Box 5115, care Paper Trade Journal. Je-15

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FOR SALE: 14 Calender Rolls 58" face, 3' to 14" diameter. 2 No 1 Claffin Engines 1 small Jordan Engine. 1 6" Horizontal Water Pump. 2 Air Fans. Complete triple-deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

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FOR SALE: 20 flint machines. Five completely set up and in good condition. All parts necessary for assembling the other fifteen. Address, Box 5134, care Paper Trade Journal. Je-1

FOR SALE: Printing press. One 7 Single Color. Cottrell Rotary. Excellent condition. Sacrifice. Mr. Dudley, McCall Company, 236 West 37th Street, New York City. Telephone Longacre 2190. Je-8

FOR SALE: One Dietz Toilet Machine, will handle 76" Jumbo Rolls, cut sheets 4 1/2 x 5 Machine has no slitter bar, but have slitters. Address, Box 5135, care Paper Trade Journal. Je-22

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JE-1

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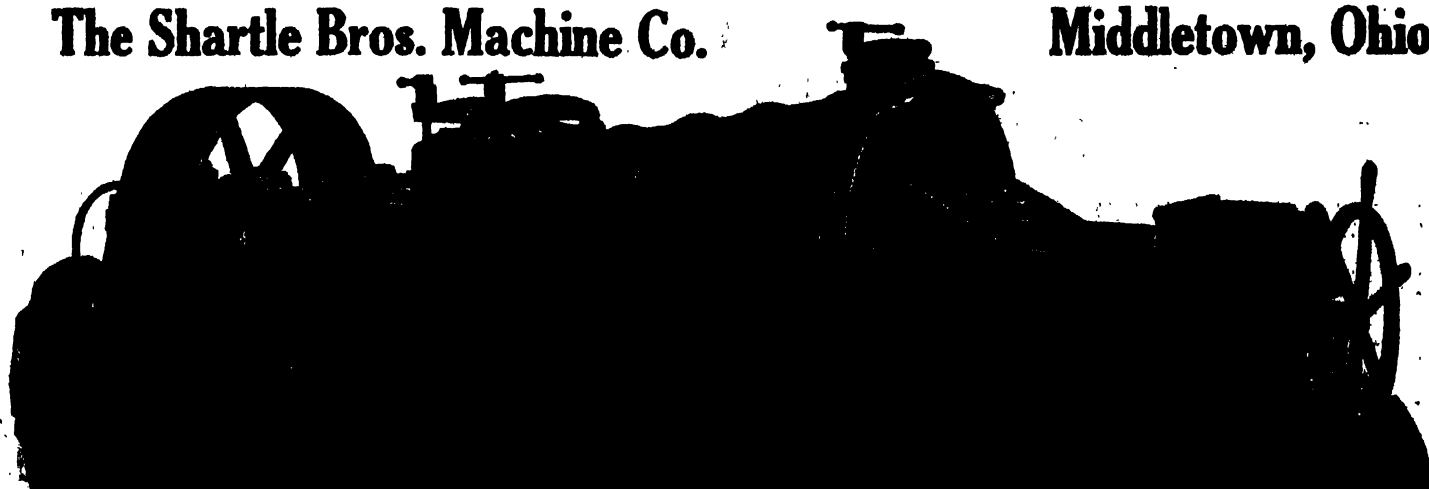
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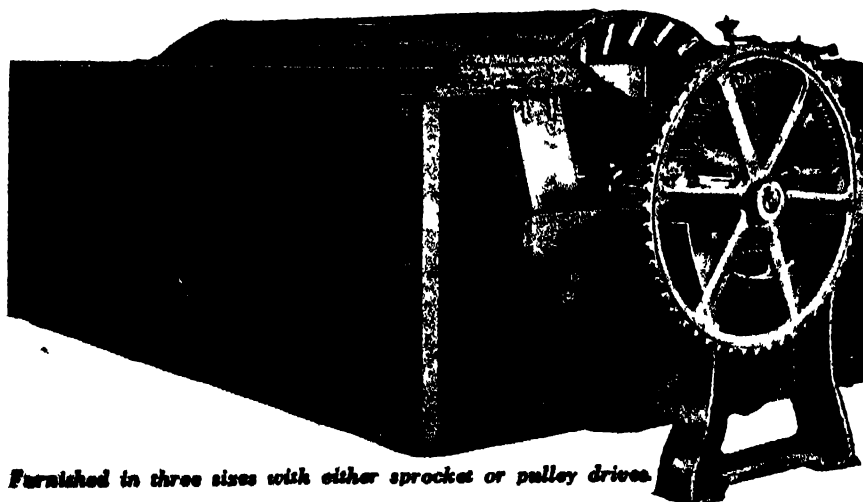
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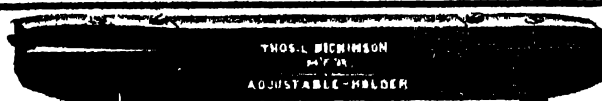
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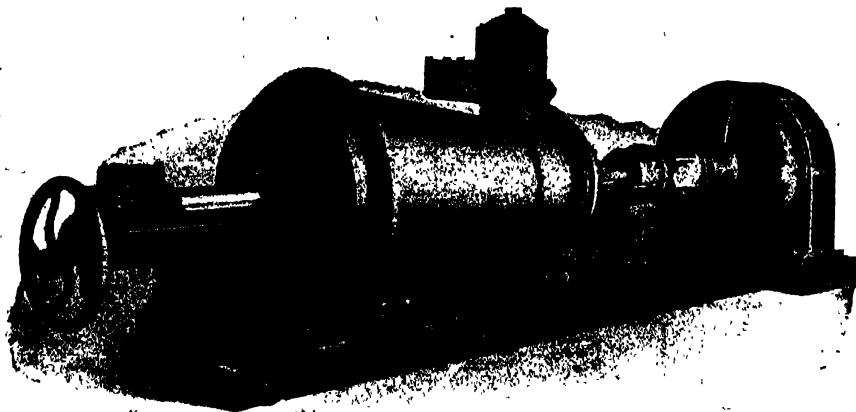
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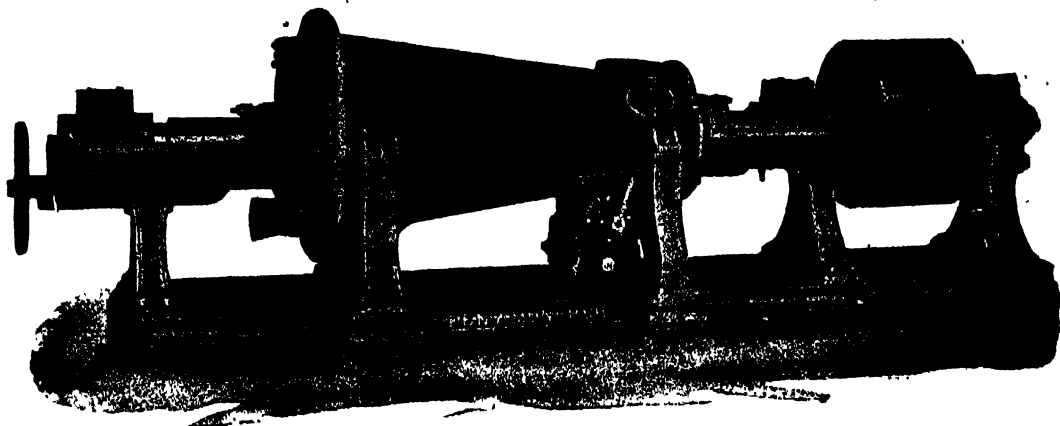
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CLASSIFIED INDEX TO ADVERTISEMENTS

ADDING MACHINE ROLLS.		CHEMISTS.		FLOOR COVERINGS.	
Paper Manufacturing Co.....	74	United States Testing Co.....	73	L. Sonneborn & Sons.....	—
AGALITE.		CLAY.		FLOOR HARDENER (Concrete).	
Union Talc Co.....	73	Atterbury Bros.....	Front Cover	J. Sonneborn & Sons.....	—
U. S. Talc Co.....	80	John W. Higman Co.....	74	FOURDRINIER WIRES.	
ALUM.		Miner Edgar Co., The.....	38	Appleton Wire Works.....	80
The Kalbfleisch Corp.....	42	Paper Makers Chemical Co.....	61	Buchanan Bolt & Wire Co.....	26
Pennsylvania Salt Mfg. Co.....	80	Star Clay Co.....	80	Cable Excelsior Wire Mfg. Co.....	80
Superior Chemical Co.....	61	Western Paper Makers Chemical Co.....	61	Cheney, Bigelow Wire Works.....	78
Winkler Bros., Inc.....	79	CLUTCHES (Friction, Etc.).		Eastwood Wire Mfg. Co.....	80
ARCHITECTS AND ENGINEERS.		Hill Clutch Co.....	8	Green Bay Wire Works.....	73
George F. Drew.....	72	COGS.		Lindsay Wire Weaving Co.....	79
Hardy F. Ferguson.....	73	N. P. Bowsher Co.....	80	Joseph O'Neill Wire Works.....	79
William T. Field.....	72	Menasha Wood Split Pulley Co.....	—	The W. S. Tyler Company.....	79
George F. Hardy.....	73	COMPRESSORS (Air).		FURNACE (Automatic).	
Management Engineering and Development Co.....	73	The Nash Engineering Co.....	57	Murphy Iron Works.....	72
F. L. Smith.....	72	CONVEYORS (Pulpwood).		GAUGES (Caliper).	
Stebbins Engineering Co.....	73	Jeffrey Mfg. Co.....	57	Farrel Foundry & Machine Co.....	25
Thomas L. Tomlins & Son.....	72	Weller Mfg. Co.....	57	GAUGES (Pressure, Indicating and Recording).	
Vitale & Rothery.....	72	CORDAGE.		Bristol Co., The.....	—
Joseph H. Wallace & Co.....	72	Columbian Rope Co.....	—	GUMMING AND GLUING MACHINERY.	
ASBESTINE PULP.		CUTTERS.		Potdevin Machine Co.....	7
International Pulp Co.....	Front Cover	Smith & Winchester Mfg. Co.....	8	INVESTMENTS.	
ASH-HANDLING MACHINERY.		DIE CUTTERS.		Taylor, Bates & Co.....	65
Jeffrey Mfg. Co.....	—	Hoggson & Pettis Mfg. Co.....	2	IRON EXTRACTORS.	
BALL MILLS.		Independent Die Co., Inc.....	8	Oakes Co., Roland T.....	—
The Crossley Machine Co.....	42	DIGESTERS.		KNIVES, ETC.	
BARKERS.		American Welding Co.....	59	Bolton & Son, J. W.....	9
Valley Iron Works.....	21	DRINKING CUPS.		Machinery Co. of America.....	9
BEARINGS (Collar Oiling).		F. N. Burt Company, Ltd.....	60	LUBRICANTS.	
Hill Clutch Co.....	9	Vortex Mfg. Co.....	33	Vacuum Oil Co.....	—
BEATER PADDLES.		DRIVES (Gear).		MICROMETERS.	
Menasha Wood Split Pulley Co.....	—	Farrel Foundry & Machine Co.....	25	Ashcroft Mfg. Co.....	60
BEATING ENGINES.		DRIVES (Silent Chain).		E. J. Cady Co.....	—
Appleton Machine Co.....	35	More Chain Co.....	72	Foreign Paper Mills, Inc.....	3
Beloit Iron Works.....	14	DRYER EXHAUSTS.		MICROMETER CALIPERS.	
Claffin Engineering Co.....	67	The Nash Engineering Co.....	57	Lodell Car Wheel Co.....	4
Dayton Reiter & Hoist Co.....	—	DRYING SYSTEMS.		MILL COGS.	
Dillon Machine Works, Inc.....	73	Open Coil Heater & Purifier Co.....	—	N. P. Bowsher & Co.....	80
Ditts Machine Works, Inc.....	61	W. F. Pickles.....	72	MILL INSTALLATIONS.	
Downingtown Mfg. Co.....	78	Ross Engineering Co., J. O.....	72	The Layne Ohio Co.....	23
Emerson Mfg. Co.....	61	DYES, ANILINE.		MOTORS.	
Noble & Wood Machine Co.....	75	Calco Chemical Co.....	12	B. F. Perkins & Son, Inc.....	11
Valley Iron Works.....	21	Heller & Merz.....	29	MOTOR TRUCKS.	
BELTING.		Mathieson Alkali Works.....	—	Packard Co.....	—
Goodyear Tire & Rubber Co.....	—	National Alkali & Chemical Co.....	—	OILS AND GREASE.	
BOILERS.		White Tar Aniline Corporation, The.....	4	Vacuum Oil Co.....	—
Heine Boiler Co.....	71	DYE STUFFS.		PACKING.	
BRONZE CASTINGS.		Dupont de Nemours & Co., E. I.....	—	Jenkins Bros.....	4
Hyde Windlass Co.....	13	ELECTRIC HOISTS.		PAINTS AND VARNISHES.	
BUCKETS (Elevator).		Shepherd Electric Crane & Hoist Co.....	—	Du Pont de Nemours Co., F. I.....	—
Hendrick Mfg. Co.....	10	ENVELOPE MACHINES.		PAPER BAG MACHINERY.	
CALENDER ROLLS.		Potdevin Machine Co.....	7	Potdevin Machine Co.....	7
Appleton Machine Company, The.....	35	F. L. Smith Machine Co.....	—	Smith & Winchester Mfg. Co.....	8
Farrel Foundry & Machine Co.....	25	EVAPORATORS.		PAPER BAG MANUFACTURERS.	
Lodell Car Wheel Co.....	4	Zarembo Company.....	—	Lawrence Bag Co.....	74
Norwood Engineering Co.....	67	FAN AND BLOWING SYSTEMS.		Schorach & Co.....	67
B. F. Perkins & Son, Inc.....	11	Garden City Fan Co.....	—	PAPER BOX BOARDS.	
Textile Finishing Machinery Co.....	—	FAN PUMPS.		C. L. La Boiteaux Co.....	5
CARBON TOOLS.		Valley Iron Works.....	21	PAPER CUTTERS.	
Thomas L. Dickinson.....	74	FELTS AND JACKETS.		Hamblet Machine Co.....	2
CASEIN.		Appleton Woolen Mills.....	8	PAPER DEALERS.	
Casein Mfg. Co.....	3	Draper Bros. Co.....	67	Fernstrom Paper Co.....	65
CENTRIFUGAL PUMPS.		Fitchburg Duck Mills.....	—	R. F. Hammond.....	Front Cover
Valley Iron Works.....	21	F. C. Huyck & Son.....	11	PAPER EXPORTERS.	
CHAINS.		Knox Woolen Company.....	7	Hudson Trading Co.....	2
Jeffrey Mfg. Co.....	—	Lockport Felt Co.....	—	Parsons Trading Co.....	Front Cover
CHEMICALS, COLORS, ETC.		Orr Felt & Blanket Co.....	59	Fred C. Strype.....	38
Arnold Hoffman & Co., Inc.....	—	Shuler, Benninghofen Co.....	—		
Du Pont de Nemours Co.....	—	Waterbury Felt Co.....	71		
Heller & Merz Co.....	12	Waterbury & Sons Co., H.....	73		
Kuttrof, Eckhardt & Co.....	71	FELT ROLLS.			
Mathieson Alkali Works.....	29	Rodney Hunt Machine Co.....	60		
White Tar Aniline Corporation, The.....	4	FILTERING SYSTEMS.			
C. K. Williams & Co.....	80	Noiswood Engineering Co.....	67		

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CLASSIFIED INDEX TO ADVERTISEMENTS

PAPER MANUFACTURERS.		Page	PRESS ROLLS.		Page	STOCK REGULATORS.		Page
Dayless Mfg. Co.	70		Rodney Hunt Machine Co.	60		Trimbley Machine Works	—	
Becker Paper Corporation	5		PLUGS.			SUCTION BOX COVERS.		
Brown Company	6		Menasha Wood Split Pulley Co.	—		Manasha Wood Split Pulley Co.	—	
Collins Mfg. Co.	Front Cover		PLUGS (Wood).			SULPHITE, BLEACHED AND UNBLEACHED.		
Diamond State Fibre Co.	75		O. L. Bartlett	—		J. Andersen & Co.	4	
Eastern Mfg. Co.	12		PULP STONES.			The Booregaard Co., Inc.	—	
Eaton Dikeman Co.	5		International Pulp & Stone Co.	Front Cover		Brown Co.	5	
Fort Howard Paper Co.	5		Lombard & Co.	60		Butterworth & Co., Inc.	73	
Franklin Paper Co.	—		PUMPS.			Canadian Robert Dollar Co.	39	
Hammermill Paper Co.	5		Frederick Iron & Steel Co.	7		Columbian Paper Co.	70	
Hanna Paper Corporation	5		Hayton Pump & Blower Co.	—		Craig Becker Co., Inc.	3	
Howard Paper Co.	59		The Layne Ohio Company	23		Eastern Manufacturing Co.	75	
Missisquoi Pulp & Paper Co.	70		PUMPS (Vacuum).			Mead Sales Co., The	—	
Mountain Mill Paper Co.	12		The Nash Engineering Co.	57		Parsons Pulp & Lumber Co.	12	
Noland Paper Co.	—		PRESSURE BULKERS.			Price & Pierce, Ltd.	Front Cover	
St. Regis Paper Co.	5		B. F. Perkins & Son, Inc.	11		Pulp & Paper Trading Co.	4	
Sherman Paper Co.	74		RAG CUTTERS.			SULPHUR.		
Stratford Paper Co.	73		B. F. Perkins & Son, Inc.	11		Texas Gulf Sulphur Co.	6	
Wausau Sulphate Fibre Co.	38		Taylor, Stiles & Co.	—		Union Sulphur Co.	61	
West Virginia Pulp & Paper Co.	5		REAM CUTTERS.			TANKS (Water, Oil, etc.).		
PAPER AND PULP MACHINERY.			Geo. T. McLaughlin Co.	—		W. E. Caldwell Co.	7	
Appleton Machine Co.	35		RECORDING INSTRUMENTS.			G. O. Jensen Co.	79	
Bagley & Sewell Co.	—		Bristol Co.	—		New England Tank & Tower Co.	2	
Baker Mfg. Co.	78		REGISTERS.			Stearns Lumber Co., A. T.	—	
Beloit Iron Works	14		Standard Register Co.	—		Tokheim Oil Tank & Pump Co.	—	
Bird Machine Co.	27		ROLL GRINDERS.			Woolford Wood Tank Co.	—	
Black-Clawson Co.	10		Farrel Foundry & Machine Co.	25		TIMBER ESTIMATES.		
Clark-Aiken Co.	69		Lobdell Car Wheel Co.	4		The Bradley Sales Agency	72	
Frank H. Davis	78		RODIN.			P. T. Coolidge	72	
Downingtown Mfg. Co.	25		Hercules Powder Co.	3		James W. Sewall	72	
Farrel Foundry & Machine Co.	71		RODIN SIZE.			TRANSMISSION MACHINERY.		
Glens Falls Machine Works	39		Arabel Mfg. Co.	79		H. W. Caldwell Co.	9	
Improved Paper Machinery	16		Paper Makers Chemical Co.	61		Hill Clutch Co.	8	
Sandy Hill Iron & Brass Co.	70		Western Paper Makers Chemical Co.	61		Reeves Pulley Co.	—	
Shurtle Bros. Machine Co.	8		ROTARY BLEACHING BOILERS.			Weller Mfg. Co.	57	
Smith & Winchester Mfg. Co.	21		Biggs Boiler Works Co.	—		TURPENTINE.		
Trimbley Machine Works	—		SAVEALLS.			Hercules Powder Co.	3	
Valley Iron Works	—		Bird Machine Co.	27		TWINES.		
Waterville Iron Works	—		SATIN WHITE.			American Manufacturing Co.	35	
PAPER MILL AGENTS.			The Kallbelsch Corp.	42		National Patent Reed Sales Co.	—	
Dillon & Barnes	74		Paper Makers Chemical Co.	61		VALVES.		
McIver, Dana T.	2		Western Paper Makers Chemical Co.	61		Crane Co.	31	
PAPER AND PULP MILL BROKERS.			SCALES (Paper).			Jenkins Bros.	4	
Gibbs-Brower Co.	70		Fred Baker	67		VAPOR ABSORPTION SYSTEMS.		
PAPER SPECIALIST.			E. J. Cady & Co.	3		Ross Engineering Co., J. O.	72	
Charles W. Bell	—		Foreign Paper Mills, Inc.	—		VENTILATING FANS.		
PAPER STOCK.			SCREENS.			B. F. Perkins & Son, Inc.	11	
Atterbury Bros.	Front Cover		Beloit Iron Works	14		Ross Engineering Co.	72	
Butterworth & Co., Inc.	73		Bird Machine Co.	27		VEGETABLE PARCHMENT PAPERS.		
Castle, Gotheil & Overton	79		Central Mfg. Co.	59		Kalamazoo Vegetable Parchment Co.	38	
Gumbinsky Bros.	80		Wm. A. Hardy & Sons Co.	76		WATER SUPPLIES.		
Hicks, Daniel M.	74		Union Screen Plate Co.	—		The Layne-Ohio Company	23	
Mendelson Bros. Paper Stock Co.	73		SHREDDERS (Pulp and Paper).			WOOD FLOUR.		
Penn Paper & Stock Co.	73		Valley Iron Works	21		Union Wood Flour Co.	73	
Salomon Bros. & Co.	73		SKYLIGHTS.			WOOD PULP IMPORTERS.		
Train-Smith Co.	Front Cover		E. Van Noorden & Co.	79		American Wood Pulp Corp.	71	
PAPER TESTERS.			SLASHERS.			J. Andersen & Co.	4	
Ashcroft Mfg. Co.	60		Ryther & Pringle Co.	—		Ira Beebe & Co.	12	
Foreign Paper Mills, Inc.	3		SLITTERS AND REWINDERS.			The Booregaard Co., Inc.	—	
B. F. Perkins & Son, Inc.	11		Beloit Iron Works	14		M. Gottesman & Co.	—	
Thwing Instrument Co.	—		C. Benninghofen & Son	72		Hammond, R. F.	Front Cover	
Valley Iron Works	21		Cameron Machine Works	74		E. J. Keller Company	12	
PAPER TUBE MACHINERY.			Dietz Machine Works	10		Lageboef Trading Co.	12	
Dietz Machine Works	10		Samuel M. Langston Co.	74		Mead Sales Co., The	—	
Grissinger Machine Works	60		STARCH.			Nilsen, Lyon & Co., Inc.	37	
PAPER WAXING MACHINERY.			Corn Products Refining Company	6		A. J. Pagel & Co., Inc.	19	
Farrel Foundry & Machine Co.	25		STEAM SPECIALTIES.			J. F. Patton & Co., Inc.	65	
Potterville Machine Co.	7		Crane Co.	31		Perkins Goodwin Co.	37	
PERFORATING MACHINES.			Open Coil Heater & Purifier Co.	—		Scandinavian-American Trading Company	Front Cover	
Dietz Machine Works	10		STITCHING MACHINERY.					
PERFORATED METAL.			Satanac Machine Co.	—				
Harrington & King Perforating Co.	67							
Hendrick Mfg. Co.	10							
Charles Mundt & Sons	61							
Manhattan Perforated Metal Co.	—							
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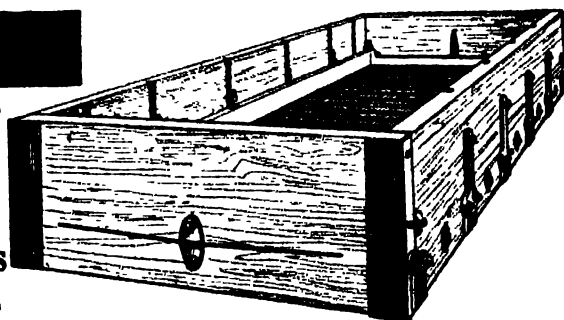
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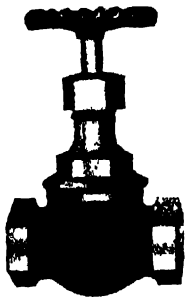


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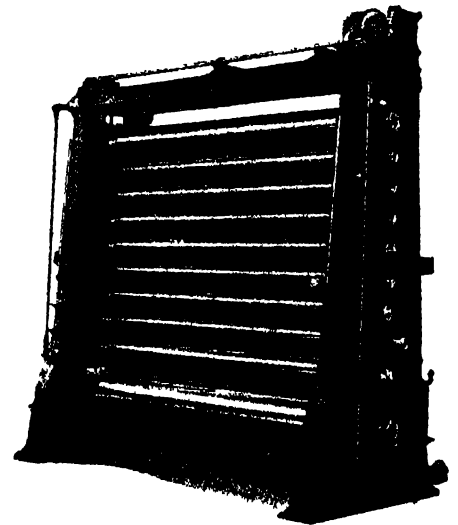
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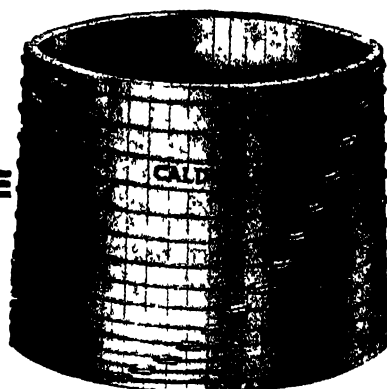
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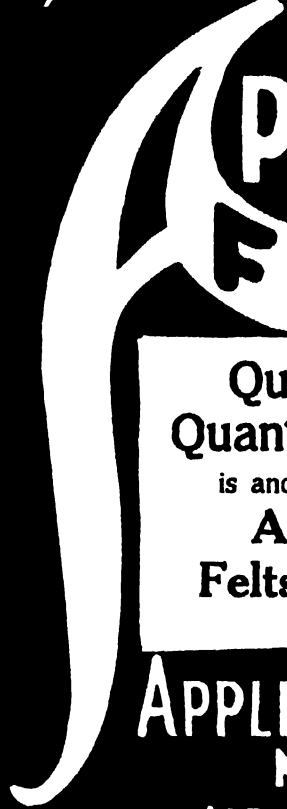
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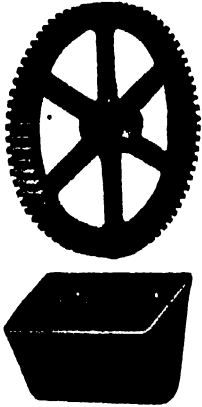
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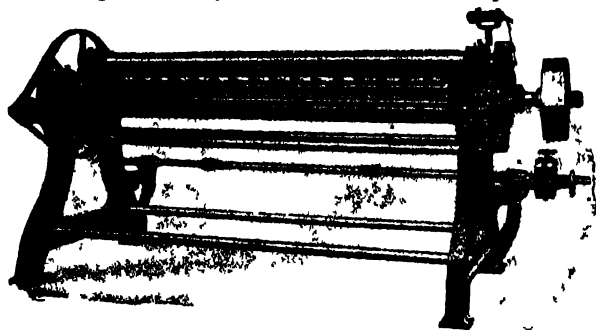
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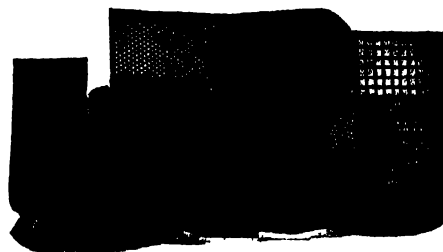
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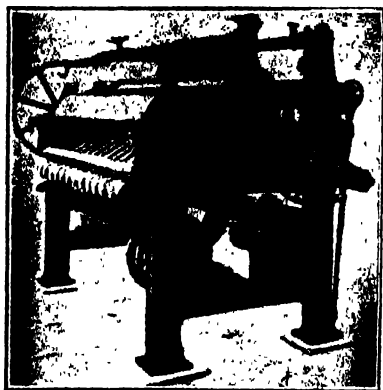
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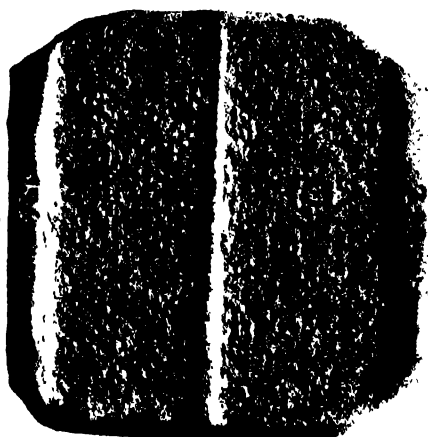
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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTY-FIRST YEAR

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Thursday, July 27, 1922

Table of Contents

News of the Trade:

	PAGE
Production of News Print for June	16
P. T. Dodge to Go to Europe	17
Says News Print Will be Higher	17
Buys Tonawanda Board & Paper Plant	17
Paper & Pulp Manufacturers in Massachusetts	17
Demand in Philadelphia Showing Good Increase	18
Paper Box Men Meet at Harrisburg	18
J. H. O'Connell Goes With Diana Paper Co.	19
British Machinery Firms Combine	19
Paper & Pulp Instruction at U. of M.	19
Herman Chemical Corp. Builds	19
Demand in Toronto Satisfactory	20
Dispute over Abitibi Railway	20
Ingersoll Paper Box Co. Incorporates	20
Ruling on Paper Sales Tax	20
To Show Folding Box Unit	21
Paper Business Improving in Boston	21
No "Dumping" of Paper from Europe	21
Coal Shortage Felt by Kalamazoo Mills	22
Hold Tariff Hearings in Grand Rapids	22
American Writing Starts Riverside Mill	22
S. D. Warren Co. Conducts Salesman's Camp ..	23
News of the Chicago Trade	23
Conditions in the German Paper Industry	24
German Prices Likely to Advance	24
Worm-Killed Lumber Good for Pulp	24
American Paper Men Seeing the Swedish Mills	28
Maine's Wood Supply	30
The Seven-Phased Standardization of Paper	32

	PAGE
Rush Rebuilding of Vulcanite Roofing Plant ..	34
Annual Report of Paper Division	36
New York Trade Jottings	38
Imports of Paper for May	56
Exports of Paper for May	58
Trade Mark Department	60
J. F. Phillippi Co. to Deal in Pulpwood	60
No Low Water at Holyoke	60
To Show Canadian Paper in New York	60
Imports and Exports of Paper and Paper Stock	64

Editorial:

Why a Paper Tariff Is Needed	40
Dictionary of Paper Terms	40
Dr. Baker in Europe	40

Technical Section:

Paper Testing Methods	43
The Coloring of Paper on the Paper Machine	49
Current Paper Trade Literature	53
Paper Manufacturing and Equipment	53
Loading Paper With Mineral Salts	53
Use of Waterglass in Sizing Paper	54
Flexible Waterproof Paper	54

Market Review:

New York Market Review	62
Market Quotations	63
Miscellaneous Markets	66

Want and For Sale Advertisements, Pages 68 and 69

PRODUCTION OF NEWS PRINT DURING THE MONTH OF JUNE

According to Statistics Just Issued by the Federal Trade Commission the Increase for June of This Year Over June, 1921, for Both Total News Print and Standard News Amounted to About 47 Per Cent—The Production for June of This Year, However, Fell Below the Production for June, 1920, by Two Per Cent for Total News Print and One Per Cent for Standard News.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 26, 1922—The following is a tabulation of the reports received by the Federal Trade Commission from domestic manufacturers of news print paper, from jobbers buying and selling news print paper, and from publishers using news print paper. Import and export statistics of the Department of Commerce are also included in the review. Whenever possible the figures for 1922 are compared with those for the corresponding period of 1921, 1920, 1919 and 1918.

The figures which follow show the results of the Commission's tabulation for June 1918 to 1922, inclusive:

	Number of mills	Stocks on hand 1st of month	Production	Shipments	Stocks on hand end of month
Total Newsprint		Net tons	Net tons	Net tons	Net tons
June, 1922.....	82	24,781	127,230	128,644	23,367
June, 1921.....	92	31,198	86,770	91,139	26,629
June, 1920.....	91	22,823	130,380	129,213	23,990
June, 1919.....	71	27,084	114,896	115,865	26,115
June, 1918.....	66	26,122	107,228	107,189	26,161
Total (6 mos.), 1922.....		23,935	690,142	690,709	23,367
Total (6 mos.), 1921.....		24,763	615,448	613,582	26,629
Total (6 mos.), 1920.....		15,369	759,624	751,003	21,990
Total (6 mos.), 1919.....		19,408	671,141	664,434	26,115
Total (6 mos.), 1918.....		31,713	634,854	640,406	26,161
Standard News (Included in Total Newsprint)					
June, 1922.....	69	19,712	117,473	119,107	18,078
June, 1921.....	72	26,955	79,769	84,663	22,061
June, 1920.....	77	20,159	119,016	118,199	20,976
June, 1919.....	53	21,837	100,965	102,779	20,023
June, 1918.....	50	18,378	98,248	96,814	19,812
Total (6 mos.), 1922.....		19,607	643,019	644,548	18,078
Total (6 mos.), 1921.....		19,573	565,582	563,094	22,061
Total (6 mos.), 1920.....		12,338	697,290	688,652	20,976
Total (6 mos.), 1919.....		15,656	609,325	601,909	20,023
Total (6 mos.), 1918.....		26,482	570,138	576,808	19,812

Note—Above figures for total news print do not include hanging paper

The average production of total news print and standard news, based upon the total combined production for the years 1917 to 1921, inclusive, amounted to 114,440 tons of total news print and 103,688 tons of standard news, for a period corresponding to June. The actual production for June, 1922, amounted to 127,230 tons of total news print and 117,473 tons of standard news, which, for total news print was 11 per cent above the average for the five year period and for standard news 13 per cent. above the average.

The production of news print for June, 1922, compared with June, 1921, shows an increase, amounting to about 47 per cent for both total news print and standard news

The production for June, 1922, compared with June, 1920, shows a decrease of 2 per cent for total news print and 1 per cent for standard news.

The production for June, 1922, compared with June, 1919, shows an increase of 11 per cent for total news print and 16 per cent for standard news.

The production for June, 1922, compared with June, 1918, shows an increase of 19 per cent for total news print and 20 per cent for standard news.

Mill stocks of both news print and standard news decreased during June, 1922.

Loss of Production

The following tabulation shows idle machine time reported to

the Commission for the month of June, 1922. This does not include mills shut down during the entire month:

Reasons	Number of Machines	Hours Idle
Lack of orders.....	16	916
Repairs.....	4	351
Other reasons.....	8	252

Jobbers' Tonnage

The following tabulation shows the news print tonnage reported by jobbers during the month of June, 1922, compared with June, 1921, 1920, 1919 and 1918, together with commitments to buy and sell:

	On hand first of month Net tons	Received during month Net tons	Shipped during month Net tons	On hand end of month Net tons	Commit- ments to buy Net tons	Commit- ments to sell Net tons
Rolls, June, 1922..	1,467	10,761	10,854	1,374	23,182	23,453
Rolls, June, 1921..	2,380	7,355	8,148	1,587	32,847	34,865
Rolls, June, 1920..	1,945	6,560	6,002	2,503	30,385	33,182
Rolls, June, 1919..	2,032	4,275	3,868	3,339	38,628	47,122
Rolls, June, 1918..	3,012	2,431	2,460	2,983	45,370	46,326
Sheets, June, 1922..	3,971	2,829	2,940	3,860	2,708	1,891
Sheets, June, 1921..	3,818	2,814	2,599	4,033	2,232	1,473
Sheets, June, 1920..	2,630	3,197	3,013	2,814	4,729	3,295
Sheets, June, 1919..	6,579	2,504	2,841	6,242	3,151	2,302
Sheets, June, 1918..	6,652	2,860	3,051	6,461	7,023	5,736
Total News Print:						
June, 1922.....	5,438	13,590	13,794	5,234	25,890	25,344
June, 1921.....	6,198	10,169	10,747	5,620	35,079	36,338
June, 1920.....	4,575	9,757	9,015	5,317	35,114	36,477
June, 1919.....	9,511	6,779	6,709	9,581	41,779	49,424
June, 1918.....	9,664	5,291	5,511	9,444	52,393	52,062

Stocks of rolls in the hands of jobbers at the end of June were 93 tons less than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 111 tons less at the end of June than at the beginning of the month. The net decrease in the total stocks of news print in the hands of jobbers at the end of June amounted to 204 tons.

Commitments to sell roll news were 271 tons greater than commitments to buy. Commitments to sell sheet news were 817 tons less than commitments to buy. Total commitments to sell both roll and sheets were 546 tons less than commitments to buy.

Publishers' Tonnage

Monthly tonnage reports from 678 (a) of the most important newspaper publishing concerns and associations grouped according to the principal business sections of the United States, together with a separate tabulation for agricultural publications show the following results for June, 1922.

Location of publish- ers (b)	Number of concerns	On hand first of month	Received during month	Used and sold dur- ing month	On hand end of month	In transit end of month
New England.....	79	15,130	18,163	17,146	16,147	2,281
Eastern States.....	179	46,718	64,219	61,298	49,639	10,566
Northern States.....	133	37,344	40,003	37,215	40,132	9,052
Southern States.....	78	8,795	9,962	9,692	9,065	2,024
Middle West.....	151	25,109	29,516	26,615	28,010	4,732
Pacific Coast.....	31	11,216	20,909	14,927	17,198	1,796
Farm papers (c).....	27	6,131	1,377	1,314	6,194	195
Total.....	678	150,443	184,149	168,207	166,385	30,616

(a) This number represents a much larger number of publications.

(b) *New England* includes Maine, Connecticut, Massachusetts, New Hampshire, Rhode Island and Vermont. The *Eastern States* include Delaware, the District of Columbia, Maryland, New Jersey, New York and Pennsylvania. The *Northern States* include Illinois, Indiana, Michigan and Ohio. The *Southern States* include Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia. The *Middle West* includes Arizona, Arkansas, Colorado, Idaho, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wisconsin and Wyoming. The *Pacific Coast* includes California, Oregon and Washington.

(c) The farm papers for the most part use special grades of news print instead of standard news.

Publishers' stocks increased 15,942 tons during the month. Average daily tonnage used during June was 35 tons less than the average used in May.

Publishers' stocks and transit tonnage on June 30 represented 36 days' supply at the existing rate of consumption.

Publishers' and Jobbers' total stocks and tonnage in transit on June 30 aggregated 202,265 tons.

The domestic consumption of standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually, for June, 1922, when compared with June, 1921, shows

an increase of 15 per cent and an increase of 16 per cent when compared with June, 1920.

The above metropolitan dailies held 60 per cent of the tonnage on hand at the end of the month.

Average Prices Paid by Publishers

The weighted average price of contract deliveries from domestic mills to publishers during June, 1922, f. o. b. mill, in carload lots, for standard news in rolls was \$3.574 per 100 pounds. This weighted average is based upon June deliveries of about 60,000 tons on contract involving a total tonnage of approximately 474,000 tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian mills of about 38,000 tons of standard roll news in carload lots f. o. b. mill, in June, 1922, was \$3.492 per 100 pounds. This weighted average is based upon the June deliveries on contracts involving about 184,000 tons of undelivered Canadian paper.

The weighted average market price for June, of standard roll news in carload lots f. o. b. mill, based upon domestic purchases totaling about 11,000 tons, was \$3.475 per 100 pounds.

Imports and Exports

The imports and exports of printing paper not dutiable (practically all news print) and of wood pulp for the month of May, 1922, compared with the month of May, 1921, were as follows:

	May, 1922 Net tons	May 1921 Net tons
Imports of news print (total)	81,352	44,238
From Canada	73,866	40,189
Germany	2,029	1,669
Norway	630	2,314
Finland	3,464	10
Sweden	1,353	37
Other countries	10	19
Exports of newsprint (total)	2,576	1,854
To Argentina	683	0
Japan	373	0
Cuba	836	1,452
Canada	166	40
Philippine Islands	148	144
Other countries	370	218
Imports of ground wood pulp (total)	11,626	7,072
Imports of chemical wood pulp (total)	51,659	17,501
Unbleached sulphite	20,334	6,112
Bleached sulphite	15,704	4,250
Unbleached Sulphate	15,621	7,139
Bleached sulphate .....	.....	.....
Exports of domestic wood pulp	2,249	2,622

The imports of news print for May, 1922, were 37,114 tons more than for May, 1921. The exports for May, 1922, were 722 tons more than for May, 1921.

The tonnage to "other countries" under "Exports of News Print" for May, 1922, includes 69 tons to Peru, 65 tons to Mexico, 64 tons to Chile and 59 tons to Columbia.

P. T. Dodge to Go to Europe

Phillip T. Dodge, president of the International Paper Company, and Allen Curtis, vice-president of the company and manager of the Department of Manufactures, will sail for Europe next Tuesday, August 1, on the *Aquitania* to make a two-months' tour of paper making countries abroad and study industrial conditions generally. Mr. Dodge, who is also president of the Mergenthaler Linotype Machine Company, will visit the company's two large factories in England and Germany. Mr. Dodge himself invented a large part of this machine, of which there are now 45,000 running in no less than forty-three different languages, having perfected over a hundred individual inventions in the linotype.

"Every language known to mankind, with the exception of Chinese," said Mr. Dodge, "may now be printed on the linotype. Recently a machine has been perfected to write the Japanese language. There are slightly more than seven hundred symbols in the alphabet. Negotiations are now being carried on direct with the Japanese government for the installation of these machines throughout the empire."

P. T. Dodge Says News Print Will Be Higher

That the price of news print paper will, undoubtedly, rise above the present quotations of \$75 per ton in the near future is the belief of Phillip T. Dodge, president of the International Paper Company. In an interview with THE PAPER TRADE JOURNAL representative, Mr. Dodge stated that the recent increase in news print prices as well as others which may come in the next few months are attributable to the abnormal demands made upon the mills manufacturing print paper and, the necessity for providing adequate machinery and equipment to keep abreast of this volume of business.

"Later the price of paper will be lower than present prices," said Mr. Dodge, explaining that this would come about through the further liquidation of manufacturing costs and the securing of cheaper labor, "but ultimately the cost of news print in this country is bound to go up—even above the prices which now exist—and this will continue in direct ratio with the growing scarcity of available pulpwood.

"At the present time," he continued, "every country selling news print, that is still using wood pulp purchased at the recent higher prices, is losing money at the price of \$3.50. Competition, with Scandinavian countries, where wages are one-third lower than they are in this country, is killing the production of American manufacturers. In the years to come, European countries and Canada will produce the bulk of the news print paper which is used in the United States. Our American mills will be operated more profitably as hydro-electric plants as there will soon be more profit in water power than in paper making.

"We've just started the best paper mill in the world in Canada. Production is gradually being shifted up there. Labor is cheaper, transportation facilities are better and fuel can be more readily obtained. Within the next ten days our fourth machine at the new Three Rivers mill will be in operation. This mill, situated at the junction of the St. Maurice and St. Lawrence rivers, with docks on the latter, is readily accessible by water, to a depth of 30 feet. Not only may the finished paper be shipped direct from the mill in this manner, but tank steamers laden with fuel oil may deliver their cargoes at the same point."

Buys Tonawanda Board & Paper Plant

BUFFALO, N. Y., July 24, 1922.—A company headed by Maurice W. Simon, who for many years prior to 1919, when the control passed into the hands of the Beaver Companies, was secretary and general manager of the Tonawanda Board and Paper Company of Tonawanda, N. Y., has purchased the entire plant of the Tonawanda Board and Paper Company from the Beaver Companies and expects to start operations in the very near future.

None of the former interests in the old Tonawanda Board and Paper Company except Mr. Simon will be connected in any way with the new enterprise. It is expected that the mill will be started in operation under a new name in the near future, producing a wide variety of box board products, boards for corrugating, pasted boards, sheet lining, etc., and will as quickly as possible be brought up to its full capacity of 150 tons per day.

The mill will be operated under the personal management of Mr. Simon, and his present activities as a dealer will be discontinued.

Paper and Pulp Manufacturers in Massachusetts

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 17, 1922.—Massachusetts manufactures more than eleven per cent of the entire output of paper and pulp turned out by the United States according to respective values, the Boston Chamber of Commerce and the Graphic Service Bureau of Boston state in a chart just published to show the need of amalgamation between the Boston Executives' Club and the Boston Chamber of Commerce in order that Massachusetts may better hold her supremacy by better methods of management and administration.

DEMAND IN PHILADELPHIA IS SHOWING GOOD INCREASE

Even After the Unusual Influences of the Possibilities of Freight Tie-up, Coal Shortage, Etc., Are Discounted, Trade Expansion Is Said to Be Larger Than Was Anticipated at This Time—While There Have Been No Actual Increases in Mill Quotations Prices Are Firm and There Is More or Less Definite Talk of Increases in the Fall—Fine Paper Division of Philadelphia Paper Trade Meets.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, July 24, 1922.—Discounting influences such as anticipation of freight tie-up, coal shortage, and the keen competition in the printing trade, even by the largest firms which heretofore have had much to say about the importance of maintaining fair prices, the fine paper distributors still find a continuation of the improvement of recent weeks and of all the more remarkable betterment which set in with the beginning of the month, a time that usually is characterized by a recession of the business tide. It is true that the more desirable orders are coming from out of town. But the local consumers of fine papers are running presses at a livelier rate than they have been and, of course, the trade benefits. There is unanimity of opinion that conditions are much better for the season of the year than some time ago it was expected they would be but there is some diversity regarding the permanency of this July end trading. The majority view, however, is that it may confidently be counted on to continue with more or less regularity until next month closes, indeed until the full tide of the fall activity which no one doubts is in store, actually appears. In the round the trade is in a well satisfied mood and the only approach to complaint lies in the fact that collections are much slower than conditions in the money market would seem to justify. It is for this reason perhaps alone that the distributors are not making as large engagements from the mills as their representatives are urging upon them to do. The mill men who have been visiting the trade during the last week, and correspondence from the executives of manufacturing concerns both urge that the distributors place immediately just as large orders as an optimistic view of the future suggests in order to secure assurance of adequate supplies when the real rush starts in and of present price level. While there have been actually no increases in mill quotations, values are very firmly held on all grades and on all sides there is talk more or less definite of increases in the early fall. In the coarse paper markets, too, the same stiffening of quotations has been experienced and while just a little while ago sales particularly of screenings and other low grades and of tissues were inclined to be sluggish they now have become considerably stimulated and almost are active. There is confidence that it is only a matter of a short while before the improvement in the coarse paper line will measure up to that which actually has taken place in the fine.

The week's experience in the paper and rag stock market was merely a repetition of that of the preceding. All the rag stock grades are moving steadily but with no special activity or notable change. All lines of paper stock with the single exception of hard whites are in good demand at the old quotation, but the mills have not yet felt it necessary to advance offerings in order to stimulate supplies. Hard whites are being stored although large quantities of these are not being gathered together.

Fine Paper Division Meets

Entirely satisfactory business conditions were reported in the postponed meeting of the Fine Paper Division of the Philadelphia Paper Trade Association, held on Thursday noon last in the

Bourse. But the outstanding matter of importance considered was the report of the special committee headed by George W. Ward of the D. L. Ward Company, and with Leon Beck of the Charles Beck Company, a most active member, on the solution of the long pending problem of handling the small order business. A very definite report on the matter was presented by Chairman Ward, and while there was almost unanimity of opinion in its favor definite action was postponed for the present only, however, pending conferences with the mill men whose co-operation is regarded as essential to the successful carrying out of the program. In a general way it can be said that the trade is desirous of inaugurating such a trade custom with regard to broken lots and small quantity sales as will encourage larger buying. But in carrying out this proposition it is regarded as essential that the paper man's point of view be fully understood by his best customer, the printers, and the present time when there is so much harmony between the two industries following the recent adoption of the agreement regulating sales to the trade and to the consumer, is regarded as being the most auspicious that has presented itself in many years to effect a change which the paper distributors believe will prove to be quite as beneficial to the printers as to themselves.

Approved Plan for Graphic Arts Building

During the week announcement was made of the approval by the National Paper Trade Association of the resolutions adopted by the general Sesqui-Centennial Committee of which Charles W. Beck, Jr., of the Beck Engraving Company, is chairman, and whose paper trade representative is President Arthur B. Sherrill of the local association. When the Sesqui-Centennial agitation began the first suggestion was for the erection of a special press building, but after further discussion it broadened out into the present project of a Graphic Arts Building, comprising all the elements of this industry and thereupon the central committee adopted resolutions for transmittal to both the National organizations and the locals of all the industries interested. Some time ago the Paper Trade Association of Philadelphia adopted the resolutions and forwarded them to the National Association whose approval has just been received by Leon Beck. It is hoped that the American Pulp and Paper Association will also give approval.

Paper House of Penna. to Issue House Organ

The first issue of a house organ called *The Bulletin* of the Paper House of Pennsylvania and issued from its headquarters, 28 N. 6th street, will appear this week. A first page article presents in picture and in story the history of the establishment and growth of the Strathmore Paper Company, for which the Paper House is one of the five Philadelphia distributors and "the thought behind its advertising." In its introductory the Paper House points out that *The Bulletin* will enable it between the appearance of its monthly price list to call attention in a more extended way to matters of interest to paper consumers. While the inside pages are devoted to an exposition of Araby Covers, the Standard Paper Manufacturing Company and other lines the outside and inside cover contain many matters of statistical value and personal interest to both the paper and the printing trades.

Paper Box Men Meet at Harrisburg

Many representatives of all the Philadelphia paper distributors, catering to the paper box trade, participated in the joint convention of the Central and Eastern Divisions held at Harrisburg on Tuesday, Wednesday and Thursday of last week, and then to show their good fellowship organized a baseball team with other supply men and defeated the box makers by a score of 13 to 1. Although not the largest in mere numbers attending, the joint meeting was one of the most interesting held. Usually the sessions are held in Reading, but this time at the invitation of The Penn-Mar Association the box makers came to the capitol of the State. Here they

were received by the commonwealth through Lieutenant-Governor Edward E. Beidelman, who presented to them the important message that they and all other manufacturers should pay closest attention to all forms of legislation before they were enacted into laws rather than wait until they were acts and then complain. The Lieutenant-Governor's interest in the association by remaining all through the session on Wednesday afternoon when uniform cost accounting was the topic of chief consideration and following the paper by Henry L. Stortz on the subject Governor Beidelman, a corporation lawyer of prominence, evidenced his interest by asking many pointed questions and participating in the discussion. Mayor George A. Hoverter, of Harrisburg, also made an address of welcome. The following officers were elected to serve for the year: Central Division, S. P. Eby, of the Harrisburg Paper Box Company, chairman; Gideon R. Kreider, Jr., of Lebanon Paper Box Company, vice chairman; Advisory Board, George O. Slingerland, of the Mechanicville Paper Box Company, Mechanicville, N. Y.; J. Frank Ridenour, of the Hagerstown Bookbinding and Printing Company; Henry L. Stortz, Sr., of Henry Schmidt & Bros., Inc., Philadelphia, and E. P. Franke, of George Franke & Son, Baltimore. Eastern Division, Chas. A. Leroy, of the L. & S. Paper Box Company, chairman.

Important among the papers read during the three days' convention were those by Mr. Stortz on "The Importance of Uniform Cost Finding Methods"; by W. A. Dillman on "Proposed Follow Up and Statistical Service of the Association"; by W. H. Hutt, Deputy Governor of the Federal Reserve Bank of Philadelphia, on "The Federal Reserve System"; and "Salesmanship," by George F. Barber, president of the Barber Industrial Service. Important among the committee reports was that of Henry L. Tay, chairman of the Industrial Relations Committee, by Frank Stone, chairman of the Central Division and Charles A. Leroy, for Herman M. Hess, chairman of the Eastern Division. National Secretary W. W. Baird presented for the first time the statistics of the industry for 1921. They showed an investment of \$71,184,871.86; sales, \$104,238,975.94; pay roll, \$43,890,490.64; paid for box board, \$13,777,636.28; paid for other merchandise, \$19,080,675.13; male employees, 18,810; female employees, 32,359, a total of 51,169. The 1920 total employment figures aggregated 59,961, and the 1919, 56,801. Membership in the Central Division, on May 1, 1922, numbered 117, and in the Eastern Division, 72.

General News of the Trade

President George W. Ward, of the D. L. Ward Company, left the city today to attend the meeting at Erie, Pa., of the conference group of manufacturers and distributors which periodically discusses matters of mutual relationship. Mr. Ward returned last week from quite an extensive trip through the State. He reported finding everywhere a very sound and healthful condition of permanent improvement and of increasing activity.

Representatives of the two Philadelphia distributors of the S. D. Warren line of Expressive papers spent part of last week in attendance at the Warren Summer Camp in Cumberland, Maine. Of the Charles Beck Company there were present Sales Manager Frederick Meinecke, and Purchasing Agent Andrew Simon, and of the D. L. Ward Company, John Conradi, Asher Humes and A. J. Clark. William Sharpies, head of the S. H. Burbank Company and chairman of the Typothete Trades Relations Committee, which with the similar committee from the paper trade association recommended the present agreement regarding direct sales, also accompanied the visitors.

J. H. O'Connell Goes With Diana Paper Co.

HARRISVILLE, N. Y., July 24, 1922.—John H. O'Connell, of Kalamazoo, Mich., president of the American Pulp and Paper Mill Superintendents' Association, has accepted the position of efficiency manager of the Diana Paper Company of this town.

British Machinery Firms Combine

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 24, 1922.—Of particular interest to the industry is the news that a combine has been effected between two great English engineering firms for the development of papermaking machinery. These firms are Charles Walmsley & Co., Ltd., Bury, Lancashire, who have manufactured some of the largest paper-making machines installed on this continent, and the famous engineering firm of Armstrong, Whitworth & Co.

The former firm occupies a premier position in the making of paper-manufacturing machinery, while the latter has recently established a hydro-electric department that is securing much business from paper mills. The Walmsley firm has had a waiting list for their machines for years, and the demands have increased as a result of the successful installation of the giant machines which this firm manufactured for the Abitibi Company, of Iroquois Falls. These machines have a width of 232 inches, and are proving most successful in every way. They are the largest in the world.

Under the combination now effected, the firm will have the advantage of the great machine shops and world-wide organization of the Armstrong-Whitworth Company, and will thus be able to speed up production and gather in more business.

The Armstrong-Whitworth Company has a shipbuilding plant at Montreal capable of turning out ships of any size. This plant was very busy during the war, but is now practically idle. It is expected that under the new arrangement use will be made of this plant for the manufacture of paper-making equipment for Canadian mills.

Paper and Pulp Instruction at U. of M.

[FROM OUR REGULAR CORRESPONDENT]

ORONO, Me., July 24, 1922.—Pulp and paper course students in the summer school of the University of Maine are now in the midst of their studies. Aside from the regular progressive work in class room and pulp and paper laboratories, they had the benefit of three lectures and two mill visits during the past week. The schedule was as follows:

Tuesday, Lecture, Physical Chemistry of Electrolytic Chlorine Cells, B. F. Brann of the University of Maine.

Wednesday, Mill Visit, Penobscot Chemical Fibre Co. Bleached and unbleached Sulphite and Soda Pulp.

Thursday, Lecture, Paper Sizing, by C. H. Champion of the Paper Makers Chemical Company, of Holyoke, Mass.

Friday, Lecture, Technical Control, Hugo Hansen, Eastern Manufacturing Company, So. Brewer, Me.

Saturday Morning, Mill Visit, Eastern Manufacturing Company, Bleached Sulphite Pulp and Fine Writing Papers.

During this week, there will be a lecture on Practical Operation of Electrolytic Cells by C. A. Blodgett of the Eastern Manufacturing Company, and on the Paper Mill Superintendent by Eugene Sullivan of the Orono Pulp and Paper Company. A mill visit to the Advance Bag and Paper Company, sulphate pulp and kraft paper and bags, Howland, Me., was made last Saturday.

Herman Chemical Corp. Completing Building

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, July 24, 1922. The K. I. Herman Chemical Corporation located at Matteson, Ill., is now putting the finishing touches on its new building. K. I. Herman, president of this recently incorporated firm, is giving the erection of the new plant his personal supervision. In a recent interview with a representative of the PAPER TRADE JOURNAL, Mr. Herman announced that as soon as the plant commenced operation, which would be early this fall, he would make his permanent office at Matteson, where an extensive experimental department is to be opened.

PAPER DEMAND IN TORONTO SATISFACTORY FOR SEASON

Most Lines Are Reported in Better Request Than Was Anticipated at This Time—Jobbers and Manufacturers of Paper Optimistic Over Improving Commercial Conditions Generally and Expect Considerable Expansion in Demand for Their Particular Lines in the Fall—Mills Making Book, Wrapping, Writing and Tissue Especially Report Orders Coming in Quite Freely.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont. July 24, 1922.—Although there is a summer lull in the paper trade, most lines report slightly better business than was anticipated. Jobbers in bond and writing papers report a fairly steady demand but the book paper trade is dull from a jobber's standpoint, although the mills are fairly busy. Although the season for catalog printing is approaching the printing trade is dull and business in this direction has not opened up on the scale anticipated. Business conditions generally in Ontario, however, are expected to improve as soon as the holiday season is over and paper dealers confidently expect to share in it. Crop conditions all over Canada are such as to guarantee greatly improved business conditions. In every section of the paper trade, both in jobbing and manufacturing there is a feeling of optimism based on improving commercial conditions. The mills making book, wrapping, writing, tissue and other papers report orders coming in quite freely but distributors complain that their orders are of rather small dimensions. Few big contracts for any line of paper are being made and the same condition prevails to some extent in the mills notwithstanding the fact that orders are coming in steadily in sufficient quantity to bulk fairly large. The news print market in Ontario is active. In this department it is pointed out that the advance in the price of news print by the International Paper Company to \$75 per ton for new business, after that company had previously forced a reduction to \$70 will have little effect upon Canadian mills, as the majority of the companies are under contract for the balance of the year at \$70 per ton. A few spot lots may be sold at the higher figure but the policy of the Canadian mills has been to maintain the \$70 basis for the remainder of 1922. When the demand for news print increased earlier in the year there were persistent reports that the mills would insist on a readjustment when the quarter closed, but the mills announced that there was no intention of raising the price. Of course the new contracts for 1923 by the Canadian mills will be influenced by the action of the International Paper Company. In the pulp market the bleached product is still in good demand and kraft has strengthened somewhat. Groundwood is moving freely but at poor prices.

Don Valley Mills Resume Operation

In less than one month from the fire which badly gutted the Don Valley Paper Mills, Toronto, the plant is again in operation. Although the paper machine and other equipment suffered severely from fire and water the rehabilitation of the plant was begun with a large staff of men under the General Manager, Nelson Gain, with the result that production has been resumed in record time. The firm is now running fairly full and is fast catching up with its arrearages of orders.

Dispute Over Abitibi Railway

The granting of a charter to the Abitibi Pulp and Paper Company, Limited, of Iroquois Falls, for the purpose of hauling pulpwood and freight from their timber limits is the subject of a dispute between the Ontario Government and the company. Backed

by the commissioners of the T. & N. O. Railway, who claim that the granting of such a privilege will cut down their revenues, the Government is now making efforts to confine the company to hauling its own pulpwood and little else. The company has established its right to a light railway charter and a legal battle is now on to confine the operation of the line to the smallest possible limits. Following a conference between the officials of the company and the Government it was decided that an agreement should be made restricting the company to certain kinds of haulage. It is now stated that while the agreement has been drawn, it is not in as good form as the Government wishes and further conferences are pending. The haulage of the pulpwood by the company, it is said, is at a cost lower by \$2 a cord, also, the company will be able to bring in the wood as it needs it, and therefore it would not be necessary to pay high insurance on the "wood pile" storage against fire. Daily supplies could be transported to the mill with a great reduction in cost.

Building Grinders for St. Lawrence Mills

Eight magazine grinders are being manufactured by the Watrous Engine Company, Brantford, Ont., for installation in the new mill at Three Rivers now under construction for the St. Lawrence Paper Mills, Limited. The mill will have both rail and deep water connection to take care of the receipt of pulpwood and the shipment of paper. It is expected that with favorable weather conditions the first of the two news print machines ordered from the Dominion Engineering Works, Montreal, will be in operation by Jan. 1 next.

A. P. Costigan Returns from Mill Visits

A. P. Costigan, the Ontario Pulp and Paper Safety Association's engineer, is back at his office in Toronto after a visit of inspection to the pulp and paper mills at Port Arthur, Sault Ste Marie and Dryden, Ont. At Dryden Mr. Costigan presented the shield and flag won by the Dryden Paper Company, Limited, for the best safety record in group A mills in the presence of an enthusiastic gathering, which was presided over by J. B. Beveridge, president of the company. In the course of the meeting Mr. Costigan gave a talk on the work of the association in relation to pulp and paper mills and a prominent employe of the mill received the trophy on behalf of the mill hands.

Ingersoll Paper Box Co. Incorporates

The Ingersoll Conc and Paper Box Company, Limited, has been incorporated with headquarters at Ingersoll, Ont., and with power to engage in a general paper box-making manufacturing business. The capital stock of the company is \$50,000 and the provisional directors are J. M. Rogers, A. H. Richardson, R. A. Skinner, C. C. Cornish and P. F. Heyes, all of Ingersoll.

For Better Printing

With the object of educating consumers of papers and printers along better printing lines, the Wilson-Munroe Company, paper dealers, Toronto, are sending out a series of very attractive mailing pieces along with examples of letterpress effects. The campaign is in charge of W. Brady, secretary of the company, who is skilled as an artist. A mailing piece of Waverly Linen Ledger contains a finely executed sketch of Sir Walter Scott, which is the work of Mr. Brady.

Ruling on Paper Sales Tax

A ruling has been received in Toronto from the Dominion Department of Customs and Excise in regard to the Sales Tax on paper sales, which has hitherto been in doubt. According to the ruling paper jobbers selling paper to printers, with turnover exceeding \$10,000 must charge sales tax of two and a quarter per cent. Paper jobbers selling paper to printers with turnover not exceeding \$10,000 sales tax of four and a quarter per cent applies.

Job printers with turnover of \$10,000 or less are not entitled to a Sales Tax license.

General News of the Trade

W. D. Gillean, formerly manager of the Canada Paper Company's Toronto office, laid the corner stone of a new Presbyterian Church in Montreal a few days ago. Mr. Gillean is now in the paper mill supply business.

The Toronto paper trade is interested in the candidacy for school trustee in Outremont of Charles P. Tucker, who is widely known in the Canadian paper trade through his connection with Alexander McArthur & Co., Limited, of which he is a director.

Holders of bonds of the Spanish River Pulp and Paper Mills, Limited, are now turning in their script to the head office in Toronto and receiving new bonds which are similar in form and on which provision is made for detaching a sheet of coupons for stock dividends.

J. G. Gibson, secretary of the Spanish River Pulp and Paper Mills, Limited, Toronto, has left with his family to spend his vacation at Keewaytin, Muskoka.

Col. C. H. R. Jones, general manager of the Spanish River Pulp and Paper Mills, was in Toronto for a few days this week. Mr. Jones is now devoting most of his time to the oversight of the company's new paper mill which is being built at Fort William and upon which excellent progress is being made.

B. Branch, manager of the Toronto office in the Royal Bank Building of the Canadian Barking Drum Company, has returned to Toronto after a motor trip through Maine.

C. E. French, of the sales staff of the Howard-Smith Toronto office has returned to the city after spending his holidays in the Adirondacks.

To Show Folding Box Unit

Boston, Mass., July 24, 1922.—At the Second Educational Graphic Art Exposition to be held in Mechanics Building, at Boston, August 28 to September 2, The George E. Crosby Company, of Boston, will exhibit an entire Folding Box Manufacturing Unit.

This unit, consisting of a 5-0 two color Miehle printing press, Babcock cylinder cutter and creaser, Specialty automatic gluing machine, Saxmeyer Bundle Tyer, and Economy baler, will manufacture from the sheeted Baird & Bartless cardboard a commercial order of folding boxes under actual shop conditions, of two million boxes to be delivered from this unit during the week of the Exposition, to a large soap company in Cambridge.

The increased demand for folding boxes has made this branch of the industry a very necessary addition to the printing trades, and a study of various packaged goods which have been placed before the buying public will show that the very highest grade of printing is required to make folding box manufacture successful.

The exhibit will be so arranged that visitors will have an opportunity to see the process of making folding boxes from the time the paper is received from the mill until the finished product is packed for shipping. The work will be under the direction of Frank Corcoran, manager of the George E. Crosby Company Box Department, and he or his assistants will be glad to answer any inquiries relating to this feature of the Exposition.

Numerous Paper Bids Coming In

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., July 26, 1922.—Officials of the Joint Congressional Committee on Printing state that they have already received quite a number of paper bids for the opening to be held on July 31. The contracts awarded at this opening are for furnishing paper for the Government Printing Office for a period of six months beginning on September 1.

Paper Business in Boston Improving

[FROM OUR REGULAR CORRESPONDENT.]

Boston, Mass., July 27, 1922.—Because of the large orders which have been received by paper mills, among them being several Massachusetts concerns, the report has been circulated among the paper houses in this city that there will be an advance in price before the fall buying season starts.

Many of the Boston merchants report that their customers are not buying any more supplies than they are obliged to because of the tightening up of credit in all lines of business and in the various industries. Some large orders are reported by several of the houses but these orders have been given at this time only because of the fact that supplies on hand have given out and the firms have been obliged to stock up again. Because of the fact that some of the mills have advanced their prices of certain grades of paper, there is now a bigger demand for other makes of the same grades which have not advanced in price as yet.

Elaborate plans are being made in this city for the Second Educational Graphic Arts Exposition to be held in Mechanics' Building on Huntington avenue from August 28 to September 2. Several of the writing paper companies have arranged for exhibits and the exposition will be one of the most interesting ever seen in the Hub. Mr. Jacob Levine, publicity director of the exposition, promises several novel features especially in connection with paper industry and allied industries.

Representatives of the American Writing Paper Company in the city this week visiting the various paper houses commenting on the reopening of three of their firm's mills, said that they believed the prospects for the paper industry in the future are very bright.

Three greaseproof parchment papers of standard quality, manufactured by the Mountain Mill Paper Company whose mills and general offices are at Lee, Mass., are being offered by several Boston paper houses. The papers offered are the Purity grade, "Quality plus"; Ashmere grade, "Equally Fine," and Berkshire grade, "Stands the Test." These papers are used chiefly in the grocery trade and in meat markets as well as by packers in general where a paper is required which is greaseproof.

Because of the extra effort some of the Massachusetts mills and paper manufacturers have made during the past month to get their goods onto the market a like effort has been made by the paper merchants in Boston with the result that the market instead of being the usual dull one during the summer months has shown normal activity and the products of the mills have been kept moving all of the time.

No "Dumping" of Paper from Europe

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., July 26, 1922.—The Customs Service of the Treasury Department which has been making exhaustive studies into the "dumping" on the American market of news print paper, pulp, and kraft paper from German, Canadian and Scandinavian countries has completed its work on all of the investigations except the dumping of news print on the American market from Canada.

Reports which have been in the hands of the customs officials for some time have now been thoroughly analyzed and it has been found that there is no "dumping" on either news print paper, pulp nor kraft paper from Germany nor the Scandinavian countries, nor is there any dumping of either pulp or kraft from Canada. This leaves the customs officials with only one paper case pending and that is as to whether or not there is dumping of news print paper from Canada.

Preliminary reports which are now in the hands of the officials show that there is no such dumping, although no official notification has yet been made on the latter point.

COAL SHORTAGE BEING FELT BY KALAMAZOO PAPER MILLS

Jacob Kindleberger, President of the Kalamazoo Vegetable Parchment Co. States That But for the Fortunate Delivery of Three Car Loads of Coal on Monday of Last Week His Plant Would Have Been Obligated to Close—Other Mill Hands Also Say Outlook Is Not Satisfactory and See Trouble Ahead—Work Is Started on New Mill of Kalamazoo Vegetable Parchment Co.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 21, 1922.—The first serious indication of impending trouble in Kalamazoo, as result of the nation-wide strike of coal miners and railroad workers, is heralded this week by the announcement that a fuel shortage menaces the paper industry. First among Kalamazoo's manufacturing enterprises and employing between 3,500 and 4,000, the nine paper companies of this city are beginning to take serious note of what the future portends.

Intimation of the shortage came when Jacob Kindleberger, president of the Kalamazoo Vegetable Parchment Company, stated that but for the fortunate delivery of three cars of coal Monday morning, his immense plant would have been obliged to close down. Mr. Kindleberger added that present deliveries are very unsatisfactory, practically no coal coming in at all, while all the time they are digging to the bottom of the company's reserve supply.

"Much of the coal found in storage is of an inferior quality," said Mr. Kindleberger. "It is full of slate and dirt and burns rapidly, at the same time generating no steam. Coal is being mined for us, in the West Virginia fields, but it is being held up along the Chesapeake & Ohio railroad."

While the Kalamazoo Vegetable Parchment Company is hardest hit of any mill in the valley and must not be taken as an indication of immediate shut-downs in this territory, the executives of most of the local concerns admit that the outlook is anything but satisfactory and that trouble is ahead, unless speedy relief comes. Coal deliveries have slowed up steadily for the past two weeks until now only a few cars a week are being received here.

"We have four to five weeks' coal supply on hand now," said A. E. Curtenius, secretary of the Kalamazoo Paper Company. "Our deliveries are very unsatisfactory and the outlook for the future is anything but satisfactory."

Slow deliveries are reported by Felix Pagenstecher, president of the Bryant Paper Company, "but," he added, "we have five to six weeks' supply in our storage bins. That will help."

"Coal shipments are unreliable and irregular," said A. H. Gilman, vice-president and general manager of the Allied Paper Mills. "We have just a fair supply of fuel on hand at our King, Monarch and Bardeen divisions."

Winship Hodge, manager of the Western Board and Paper Company and R. L. Peave, secretary of the Hawthorne Paper Company, returned much rosier opinions than other mill heads approached. "We have two months' supply of coal ahead and fuel has been coming to us in just the right amounts," said Mr. Hodge, while Mr. Pease added: "All conditions considered, we are sitting very pretty. It is true that contract shipments are low at this time, but we still have fully eight weeks' coal supply on hand."

Business is certain to suffer as result of present unsettled conditions, according to L. W. Sutherland, president of the Sutherland Paper Company. He looks for a slowing up of business this fall and winter. "Coal deliveries are very slow," he said. "We have enough to last another three weeks."

It was impossible to get in direct communication with B. C.

Dickinson, president of the Standard Paper Company, or Merrill B. King, president of the Rex Paper Company, so no statement is forthcoming regarding the fuel supply at those two plants.

S. B. Monroe reports that the MacSimBar Paper Company, Otsego, has a fair supply of fuel on hand at this time. Like all other mills, it is hampered by slow shipments.

Start Work on Vegetable Parchment Plant

Work on the new mill for the Kalamazoo Vegetable Parchment Company has started in dead earnest and H. L. Vanderhorst, contractor, has literally an army of men engaged there in numerous ways. The new mill site has been staked out and concrete workers are now putting in the piers, foundations and abutments. There is practically no excavating to be done as the basement of this plant will be in reality a first floor, quite as light and airy as any other section of the mill.

In addition to work on the new mill proper, a big storage warehouse is being erected just south of the present Glendale division. This building is of brick and concrete, one story. It is to be 250 feet long by about 60 feet wide. A driveway extends the length of the building. This structure, when completed, will house all kinds of supplies that at present have to be stored in the various divisions of the paper mill. The Kalamazoo Vegetable Parchment is buying many kinds of building material and other supplies in carload lots and proper storage facilities are necessary.

Another building to be started in the near future is the filtering plant. This will be located just west of the present paper mill and will be of concrete, steel and brick.

Hold Tariff Hearings in Grand Rapids

Alleging discrimination in freight rates in favor of the Fox River Valley Mills, the Michigan Paper Mills Traffic Association is conducting hearings in Grand Rapids before Attorney Examiner Hunter, of Washington, of the Interstate Commerce Commission.

Kalamazoo valley and western Michigan mills are interested in this fight, being represented by F. A. Larish and F. J. Daugherty of Chicago.

It is set forth for the initiation of the hearing that shippers from the Fox River district, Wisconsin, have much the best of it in competition with mills in Michigan, certain sections of Wisconsin and other western states.

The hearings have been in progress for four days and a great deal of expert testimony has been introduced.

Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 26, 1922.—The Purchasing Officer of the Government Printing Office has received the following bids for 20,000 lbs. of Strawboard, 26 x 38—No. 50: R. P. Andrews Paper Company, \$48.00 per ton; The C. L. LaBoiteaux Company at \$48.30; The Whitaker Paper Company at \$52.50; Spaulding and Tewksbury Company at \$36.80, \$66.70 and \$58.10.

Bird & Son have been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 8,000 lbs. of 36 x 48 gray pressboard at 9½ cents per pound, bids for which were opened on July 7.

American Writing Starts Riverside Mill

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 24, 1922.—The Riverside No. 2, division mill of the American Writing Paper Company resumed operations today after being shut down for some time. There is no indication at the present time, according to officials of the American Writing Paper Company of the usual mid-summer slump. If business continues as at present for the remainder of the summer months a gain in manufacturing operations will be noted.

S. D. WARREN CONDUCT SALESMAN'S CAMP IN MAINE

Forty Students and More Than Thirty Post Graduates Attend Third Annual Session of Well Known Paper Company at Westbrook—Hon. Joseph A. Warren, Mill Manager, Makes Address of Welcome and Representatives of the Company and Well Known Distributors of the Warren Lines Make Address on Interesting Topics—Salesmen From All Over the Country in Attendance.

[FROM OUR REGULAR CORRESPONDENT]

WESTBROOK, Me., July 24, 1922.—With 40 students and more than 30 post graduates in attendance, the third annual salesman's camp and school of the S. D. Warren Company was a marked success on the three last days of the week just ended. The program consisted of intensive study of the production and sale of Warren Standard Papers, with discussions and practical demonstrations at the plant. The men were quartered in the Warren Camp at Warren Park, the discussions were held at The Elms, and demonstrations were carried out in the various departments of the mill.

Hon. J. A. Warren Makes Address of Welcome

Hon. Joseph A. Warren, mill manager, gave an address of welcome at the opening session, which he supplemented by an address on the subject of "Why Standardization?" Superintendent Benjamin T. Larrabee of the sulphite department of the Warren Mill spoke on "Making of Standard Pulp" and an address by Superintendent Nelson R. Davis of the paper mill on "Making of Standard Paper" was heard with interest. Addresses were followed by a demonstration in the sulphite and paper making departments of the plant.

In the afternoon, the program was devoted to salesmanship, opening with a discussion of the "Warren Partnership" by W. B. Stevenson, vice-president and secretary of A. Storrs & Bement Company of Boston, followed by talks and comment on problems in connection with various phases of the sales proposition by W. D. Rogers, W. M. Gordon and B. S. Van Wyck of the S. D. Warren Co.

Following the afternoon session, tennis was enjoyed on the Warren Athletic Field and the party autoed to Pine Point early in the evening, where a shore dinner was served and surf bathing enjoyed.

Competitive Salesmanship

Discussion at the first session Friday morning was devoted to the subject of competitive salesmanship, the Warren test sheet and the printing of Warren papers. The principal speakers were A. H. Seyler of the Alling & Corey Company, of Pittsburgh; G. B. O'Neill of Henry Lindenmeyr & Sons, of New York, and F. E. Wagner of the S. D. Warren Company. The second session of the morning was taken up with a discussion of the "Coating of Standard Paper" by F. A. Verill of the Warren Company and the "Safeguards of Product" were discussed by Harry W. Grant, mechanical engineer; Killey E. Terry, superintendent of power; Edwin Sutermeister, chief chemist; L. P. Parkman, head of the inspecting department, and Almon N. Waterhouse, superintendent of finishing department, all of the S. D. Warren Company.

Friday afternoon, the time was spent in demonstrations of the mill operations involved in coating standard paper and of safeguarding the product. The athletic feature of the day was a baseball game between teams composed of the Cumberland Mills forces and the Salesmen's School at the Warren League Grounds. Dinner was served at the Warren Camps at 7.30 with Roger D. Smith of the S. D. Warren Company, presiding, and members of the school and Warren department heads being present. After dinner talks included a discussion of advertising by W. J. Boardman, vice-presi-

dent of the George Batten Company and the Warren campaign by F. R. Feland of the same company.

An address by William Sharpless of S. H. Burbank & Co. opened Saturday morning's session, followed by examination and presentation of diplomas.

Students Enrolled for the Course

The following students were enrolled for the course:

Earle R. Wheatty, Sloan Paper Company, Atlanta, Ga.; J. Page Hayden, D. L. Ward Company, Baltimore; Maurice A. Blackmur, Joseph A. Mullen, Paul M. Jones, Samuel Talbot, A. Storrs & Bement Company, Boston; E. A. Hepp, Alling & Corey Company, Buffalo; George L. Armour, Cyril L. Ward, Paper Mills Company, Chicago; Joseph Rowley, Harry Fick, Chicago Paper Company, Chicago; H. J. Winterman, Diem & Wing Paper Company, Cincinnati; W. H. Bancroft, Central Ohio Paper Company, Columbus; E. J. Evers, Beecher, Peck and Lewis, Detroit; Vernon Correll, Henry Lindenmeyr & Sons, Hartford; P. C. Lowe, Midwestern Paper Company, Kansas City; George A. Just, The W. F. Mackie Company, Milwaukee; W. B. Strait, John Leslie Paper Company, Minneapolis; E. W. Taylor, M. A. Vincent, E. B. Wardsworth, Henry Lindenmeyr & Sons, New York City; H. Kenneth Weed and J. Oscar Young, Jr., Alling & Cory Company, New York City; D. C. Barry and T. Thumser, Lasher & Lathrop, Inc., New York City; Harold F. Braun, National Paper & Type Company, New York City; J. F. Hamilton, Field-Hamilton-Smith Paper Company, Omaha; G. Clark and J. Conradi, D. L. Ward Company, Philadelphia; Andrew Simon and F. W. Meinerke, Charles Beck Company, Philadelphia; E. G. Meek, Alling & Cory Paper Company, Pittsburgh; G. H. Tower, C. M. Rice Paper Company, Portland, Me.; Richard M. Harris, Alling & Corey Company, Rochester, N. Y.; J. Igstadter, Zellerbach Paper Company, San Francisco; C. N. Blake, Mack-Elliott Paper Company, St. Louis; G. F. Schall, Beacon Paper Company, St. Louis; H. L. Wucher, Central Ohio Paper Company, Toledo; Perry Hazard, D. L. Ward Company, Washington; Asher Humes, D. L. Ward Company, Wilkes-Barre.

News of the Chicago Trade

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, July 24, 1922.—H. A. Rowley, of the Chicago Paper Company, left for Sturgeon Bay, Wis., July 17, where he will spend a month's vacation. He is a strong advocate for out-of-door life and will spend most of his time fishing and hiking throughout the northern part of Wisconsin.

J. H. Coy, of the Marathon Paper Company, is to leave for Park Falls, Wis., where he will rest for about two or three weeks. Mr. Coy and family will motor from Chicago stopping at all interesting points along the way. He also intends to visit the mills of the Marathon Company which are located in northern Wisconsin. Fishing is a vacation man's prerogative and from all talk Mr. Coy intends not to miss any of this pleasure while enroute.

G. J. Cadwell, assistant general sales-manager of the American Writing Paper Company is at the company's office, 10 South La Salle street, on a trip from the company's general offices at Holyoke, Mass. Mr. Cadwell is a former Chicagoan and worked many years for the American Paper Company here in Chicago before being transferred to Holyoke. He is about the city visiting his many old friends and relatives and will leave for the East about July 29.

C. W. Hollenback, salesman of Bradner-Smith & Co., 175 West Monroe street, has motored to Wisconsin where he and his family will visit for the next two weeks.

J. E. Thorndyke, salesman for Bradner-Smith & Co., has left for Vancouver, British Columbia, to visit for a month.

H. G. Smith, credit manager of Bradner-Smith & Co., is spending his vacation in the Northwest. Mr. Smith is expected to be gone a month and will return about the middle of August.

I. A. Kennedy of Bradner-Smith & Co., motored with his family to Antioch, Ill., to visit for about two weeks.

CONDITIONS IN THE GERMAN PAPER INDUSTRY

BY S. FERENCZI, EDITOR OF PAPIER-ZEITUNG

BERLIN, Germany, July 8, 1922.—The great social event of the last weeks was the convention of the German Paper Makers' Association in Nuremberg. It was an exceptional gathering, as it was at the same time the fiftieth anniversary of the Association. Just 50 years ago, in 1872, soon after the victorious war against France, the paper makers all over the new empire thought it advantageous to have an association of their own. About twenty paper makers came together in Nuremberg and founded the Association, which has now about 500 members representing almost the whole paper making industry of the country. Five of the founders are still alive, and they have now been nominated honorary members of the Association. The president, Rudolf Ebart has been honored by the Technical University in Darmstadt (which has special classes for paper makers, maintained by the Association) making him "honorary doctor of Engineering." The same title was conferred to Dr. Adolf Scheufelen, vice-president of the Association, by the Technical University of Stuttgart. Both of the new honorary doctors have also technical merits: Mr. Ebart as chief partner and manager of the firm Gebr. Ebart in Spechthausen near Berlin, whose mill for almost a century has made the paper for the Prussian and German banknotes, some of them with artistic watermarks; Mr. Scheufelen's mill in Oberlenningen was the first to make coated "art printing" paper in Germany.

The Association of the Pulp and Paper Chemists and Engineers at about the same time held a meeting at Nuremberg, and the following subjects were dealt with: The ventilation of the paper machine building; The influence of drying upon the sizing of paper; Dr. Ruth's steam accumulator and its use in chemical pulp mills; Roofs for paper mill buildings. A new method of making the chemical pulp ready for the wet machine, a special feature of this method is a new sort of inclined flat strainers patented to the Swedish engineer Morch.

Paper Market Not So Active

The paper market has lost in the last weeks much of its activity, though paper is still scarce in the whole country. The mills are provided with orders till about November, but the buyers cannot afford to pay the high prices, as notwithstanding that the always increasing inflations—money is getting scarce, bankers are cutting the credit to the trade, and payments are coming in very slowly. The buying power of the paper users and converters has diminished, as the prices of all commodities have about doubled since the last two or three months. The conference of Genoa and the bankers' meeting in Paris having not brought the big international loan for Germany, the mark began to drop, and the murder of the minister of foreign affairs, Dr. Rathenau, caused a new slump of the mark, the socialistic parties tried to get the Government into their hands, but the demonstrations and strikes by which they would demonstrate their power led to riots in many places and had the effect that the public opinion now demands a policy which has to consider also the interests of the wealthier class. So everything is in suspense, and business is more and more depending on politics. The Berlin printers are on strike and all printing offices have been closed since July 1, except those of the socialistic parties. The printers' workmen left their working places, though they have a contract, and though they have been promised the new high wages they asked for, after having resumed work. The leaders of their unions have lost their influence with them, and the political character of the strike is obvious. The master printers are decided to stick to the contract, and it is supposed that the workmen will in some days return to work.

Some thousands of tons of printing paper have not been used in the meantime and are free for the open market. Part of this quantity will be ready for exportation, as foreign money is strongly wanted, and the dollar is as high as 530 marks today.

The home prices for pulps have been fixed for the month of July by the unions of the pulp makers as follows (in marks for 100 kilograms, f. o. r. at the station of the paper mill):

CHEMICAL PULP.

II a. Unbleached	1,625
I b. (Newspaper sulphite)....	1,750
I a. Unbleached	1,825
I a. Easy bleaching	1,950
II a. Bleached	2,200
I a. Bleached	2,300

MECHANICAL PULP.

I a. Unbleached	1,450
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These are the official minimum prices; yet it is very difficult to get chemical pulp from the mills at these prices, as the demand is much greater than the supply. As the German coal goes in big quantities to France on account of the reparations, our mills buy now British coal. Some chemical pulp mills in Upper Silesia and the Memel territory have been detached from Germany and their output goes to foreign countries, as they would be obliged to pay high custom duties when imported to Germany. The artificial silk factories also are heavy buyers of sulphite pulp, and some pulp yarn factories are very busy, as cotton is getting more and more expensive. Only the mills making news print paper get the pulp at the official minimum prices as the newspaper publishers are favored by the government.

Prices Likely to Advance

The paper prices for July have again been raised by 20 per cent. and for the following month a new increase in prices is in sight. News print paper in rolls costs now at the mills 2,000 marks the 100 kilograms, that is about 98 times the pre-war price. Many country newspapers cannot afford to pay these prices and cease to appear or reduce the number of their issues. The government has tried to help them by reducing the railway freight for news printing paper and the taxes on newspaper advertisements. Just now a new law is before a parliamentary commission by which a fund of 500 million marks is to be raised yearly for lowering the cost of paper to the newspaper publishers. First it was intended to collect this sum from part of the export profits of the paper trade; this way was opposed by the members of this trade, and also by the woodland owners, upon whose shoulders the tax was to be laid later on, so the government decided to take the money from the export profits of the whole German export trade.

Worm-killed Lumber Good for Pulp

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 24, 1922.—That lumber killed by the spruce bud-worm is perfectly good for the manufacture of pulp is the contention of Dr. F. C. Craighead, of Ottawa, who is doing special work in New Brunswick for the Dominion Entomological Branch in connection with spruce bud-worm infestation. He states that this season a firm in the province of Quebec is using lumber killed by the bud-worm for the manufacture of pulp to the extent of 75 per cent of the total passing through the mills. Investigation work is now being carried on at various places in the northern and central portions of New Brunswick.

A New Sulphite for Book Mills!



CLEAN

GOOD STRENGTH

HIGH COLOR

UNBLEACHED SULPHITE

Made by the MO och DOMSJÖ A.-B., STOCKHOLM, SWEDEN

This pulp contains all the necessary requirements demanded by Mills wanting an exceptionally high color, clean, strong sulphite

*Wire us for Samples and Quotations
For Shipments over the Balance of the Year*

A. J. PAGEL & CO., Inc.

347 Madison Avenue

New York City

PAPER CONSUMPTION DECLINES IN GREAT BRITAIN

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., July 24, 1922.—Constant Southworth, acting chief of the Paper Division of the Department of Commerce, has compiled the following from various sources regarding the British paper industry.

There was a sharp drop in the consumption of paper in the United Kingdom in 1921, as compared with 1920. The consumption in 1920 amounted to 1,743,028 tons, while the consumption in 1921 totaled only 908,807 tons. Ordinarily, slightly more than one-third of the paper consumed in the United Kingdom is imported.

According to figures appearing in the Industrial Year Book, 1922, the production of different kinds of paper in the United Kingdom is divided as follows:

	Per cent of total production.
Engine-sized, writings and cartridges, fine printings, and lithos	41.2
News, white mills, and wall papers	23.5
Browns, wrappers, grocery, and packing papers	18.4
Pulp, mill, leather, glazed, and strawboards	4.7
Machine-made, tub-sized, and air-dried	3.8
Wrapping	3.6
Envelopes, printing, litho, and cover papers	1.6
Blotting and plate papers	0.7
Hand-made paper	0.4
Cigarette and copying tissues	0.3
Other varieties	1.8

The preceding figures are based on information supplied by the Papermakers' Association of Great Britain and Ireland, and relate to a total production of 516,200 tons.

In certain cases it is difficult to interpret the meaning of these figures because of the vagueness of some of the headings. For instance, it is hard to know why "wrapping" should be classified separately from "browns, wrappers, grocery, and packing papers." Moreover, it is not specified whether these figures are compiled on a basis of tonnage or of value. Presumably they are on a basis of tonnage.

However, the figures serve to show that engine-sized writing paper and high-grade book paper together form the group of paper produced in the largest amount. News print, including hanging paper, ranks next and wrapping paper third. Paper board and extra-fine papers make up a very small part of the total tonnage.

The exports of paper from Great Britain are very small compared with production and imports. In 1921 the exports of paper from the United Kingdom amounted to only 73,250 tons.

American News Print Received in England

There was considerable comment in the United Kingdom on the recent arrival of 2,500 tons of news print from the United States. It is an unusual thing for a shipment of paper of this size to be sent from the United States to England. Its arrival consequently has caused some surprise and apprehension in the trade on account of the already keen competition existing in the English news print industry. The arrival of this shipment is regarded as significant of a recent tendency toward rearrangement of world distribution of paper. In connection with this shipment and shipments, during the 18 months, of European news print to the North American Continent, it is being asked in certain quarters if it would not pay the paper manufacturers, both in North America and Europe, to try to avoid the expense of a transoceanic exchange of news print.

Australian Market for British Paper

British trade papers state that the Australian demand for paper is increasing. On August 1 the present restrictions, which prevent imports of paper from Germany into Australia, will be taken off.

Paper manufacturers in the United Kingdom are afraid that this removal of the barrier to imports from Germany will result in dumping. To reassure those interested in maintaining a profitable level of prices for paper in Australia, the Minister of Customs has issued a statement to the effect that no other country has framed such stringent regulations to prevent illegitimate flooding of its market as has Australia. It is said that the power given by these regulations to bring the values of goods imported from Germany or elsewhere up to the value of goods imported from the United Kingdom will be rigorously enforced if necessary.

Cost of Shipping Paper by Rail

According to an investigation recently made by the Papermakers' Association, it costs considerably less to transport news print from certain Norwegian and Finnish ports to consuming centers in the United Kingdom than it costs to send news print by rail from certain paper-manufacturing regions in the United Kingdom to the same British consuming points. Thus, it costs much more to send news print from Lancashire to London by rail than to send it from Christiania or Helsingfors to London. Similarly, the rail charge for conveying news print from Thamas to Glasgow is much larger than the rate for transporting news print from Christiania or Helsingfors to Glasgow. In many cases during recent months the Scandinavian manufacturer has had an additional advantage in the depreciation of his country's exchange.

Because of the disadvantage suffered by reason of these facts British paper makers are agitating a radical reduction in the railroad rates of their country. At the same time an agitation is going on to reduce the rates for ocean transportation, particularly to Australia. It is claimed by British manufacturers that goods can be shipped from Swedish, German, and Dutch ports to Australia at rates from 10 to 12½ per cent below those charged by the British conference lines.

Market for Kraft Paper Strong

The market for kraft paper in the United Kingdom is becoming strong. It is not unlikely that something in the nature of a boom will take place. At the same time, it is reported that the demand for kraft in other countries, particularly Germany, is greatly improving.

Scottish Esparto Market

It is reported from Scotland (a country which makes a specialty of esparto paper production) that the demand for esparto papers show a distinct improvement. Some of the Scottish mills are sold up on orders for esparto paper. It is claimed that the quality of the paper now being made is fully equal to if not better than the paper made 10 years ago. It is stated, however, that the variation in the prices charged by different manufacturers is too great and that there should be more uniformity in price quoting.

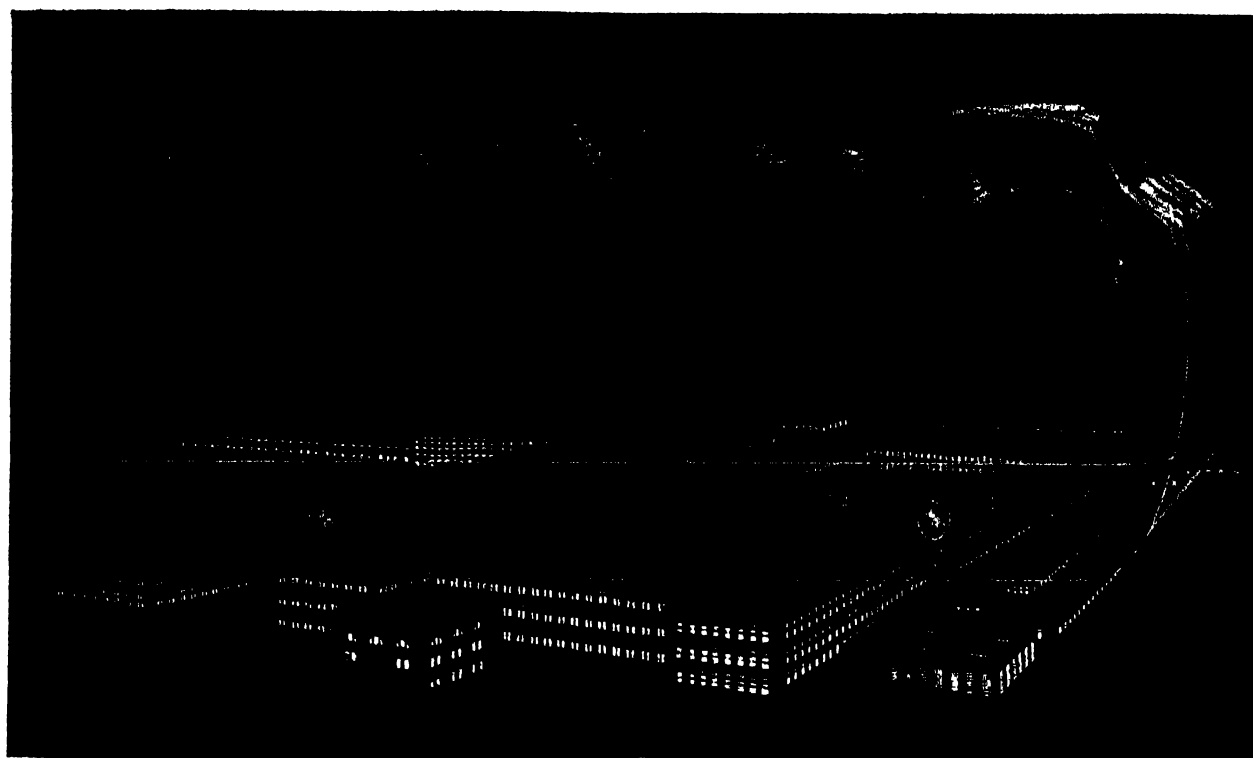
Moving Pictures of Book Manufacture

In connection with the move of the United States Department of Commerce to cooperate with industry in preparing films for use in promoting sales of American goods in foreign countries, it is interesting to note that a moving picture film showing the process of making a book has recently been shown in London.

Dill & Collins Open Chicago Office

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, July 24, 1922.—The Dill & Collins Company, of Philadelphia, has opened a new branch office in Chicago. The new Chicago branch is located in the Continental and Commercial Building, 208 South La Salle street. It will be under the direction of Courtney H. Reeves.



The Company—Back of Its Guarantee

There is a real significance to the red, white and blue *Tape-Marker*, which can be found in one strand throughout the entire length of every *Columbian Tape-Marked Pure Manila Rope*.

It has a broader meaning than merely a mark of identification. It means that the manufacturers stand behind every rope containing this Marker, because they know that it has proved, and is proving worthy of such confidence.

By means of this *Tape-Marker*, a permanent connection is established between the Company and its product, which is a protection to the dealer, and an infallible guarantee to the ultimate user.

Mr. Dealer - Insist on getting guaranteed *Columbian Tape-Marked Rope*. There is a jobber in your vicinity.

Write for *your* copy of the folder, "*How Columbian Tape-Marked Pure Manila Rope is Made.*"

COLUMBIAN ROPE COMPANY

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AMERICAN PAPER MEN SEEING THE SWEDISH MILLS

By DR. HUGH P. BAKER, EXECUTIVE SECRETARY OF THE AMERICAN PAPER AND PULP ASSOCIATION.

STOCKHOLM, July 10, 1922.—The hospitality of the Scandinavian paper and pulp manufacturers to American visitors has been the most notable single feature of the visit to Sweden. A willingness to show us the mills, processes and operations in general, is in notable distinction to the old spirit of Europe to entertain American visitors so elaborately that they would see nothing of the industries which they wished to visit.

In the effort to build up a harmonious relationship between the United States and Sweden, the Swedish manufacturers have taken Mr. Sisson and myself to the mills, and have disregarded the fact that a manufacturer of Mr. Sisson's prominence is a business competitor of the hosts of our party.

Want to Avert Destructive Rivalry

The new attitude appears to be a belief that destructive rivalry between the two countries can be averted and a friendly competition established by a better knowledge by each country of the situation of the other.

The importance of the American market to the Swedish manufacturer cannot be over-estimated, either by the American or the Scandinavian. This being the fact, a brief resumé of some of our experiences will illustrate the point already made, that we are being given a real opportunity to see the Swedish mills and to study their manufacturing problems.

It has taken time to accustom ourselves to living daily with people who do things differently from the way we do them, and this doing things differently means thinking differently, so the days have passed without our really getting into things, as we do so quickly in our own country. These Swedes and their ancestors have been living here in the country a thousand years and their development as a people and a nation has been slow and hard because they must fight constantly with nature for the living they are making. Perhaps our first impressions were gained under rather adverse conditions but we landed on a rocky coast and there have been few warm cheerful days since our arrival. But this constant struggle has made them good fighters and they have learned that what they gain must come through hard work and high quality in what they turn out.

In all we have seen of the forests, the pulp and paper mills, their means of transport and their utilization, we are convinced that we can expect quality from them all the time in what they send out from the pulp and paper industry. This means keen competition for the world's markets. If we ever try to compete for markets in South America, or the Far East—and I hope our industry will get into these markets with all four feet, we will win our markets only on quality and a willingness to understand and adapt ourselves to those markets—characteristics which these people here seem to understand in an effective way.

Secretary Baker Meets Minister Wallenberg

It was fortunate and very pleasant for us that Mr. Axel Wallenberg, Minister from Sweden to the United States, was on the boat coming over. We had several talks with him as to conditions here in Sweden and as to what we should see and his suggestions and his help since we arrived here have been very helpful. Mr. Wallenberg is a member of one of the most influential families in Sweden and wide business experience here has made it possible for him to see our conditions in America with an unusually clear vision. It is fortunate for the pulp and paper industry here and in America that Mr. Wallenberg returns to America next fall. We may count upon him to do all possible to develop better relations, better understanding between parts of our common industry in Sweden and America.

To acquaint ourselves somewhat with the country, and to get our

land legs gradually we spent the first three days in Sweden in a trip on a small boat through the Gotha Canal from Göthenborg to Stockholm. As the weather was good it was a delightful trip. We had opportunity to walk and visited wonderful electric power plant at Trollhattan—situated on a river which has much the same reserve of water as Niagara has. We were surprised at the large size of the farms—which in many cases resembled the farms of Wisconsin and Minnesota—in size and arrangement and appearance of buildings. Upon our arrival in Gothenborg we were greeted with telegrams from the Swedish Cellulose Association and from the Finnish Association. Upon our arrival in Stockholm we found a letter from Consul Thorsten Lundgren, director of the Swedish Wood Pulp Association, telling us of arrangements he had made for our entertainment over the week end, which happened to be the Swedish Holiday of Midsummer. Saturday morning we were met by Consul Lundgren and his wife with a machine and driven some forty miles out to Klokloster—an old castle now owned by the leading noble family of Sweden—wonderful collection of arms—guns, etc—and tapestry. We lunched there (in the rain) then drove to Uppsala, the seat of the oldest Swedish University. Vacation time made it impossible to see much of the University but we went into the old church built nearly 300 years ago and saw the graves of Linnæus the botanist, and Swedenborg the religious leader. Sunday morning we were met at the dock in front of the Grand Hotel by Consul and Mrs. Lundgren with a tug boat and spent Sunday running down towards the Baltic and back. The Consul had as his other guests a young Swede—now in the Swedish foreign office in Stockholm—and his wife, a delightful American girl from Ohio, so we had an unusually delightful day, and it was one of the few fine clear days we have had so far.

Enjoying Swedish Hospitality

Monday was spent in conference with Consul Lundgren on details of our proposed trip through Sweden, with a visit to the Forest Academy at Stockholm, the National Forest School where we met the Director, Professor Anders Wahlgren and Prof. G. Schotte to whom we had letters of course. We were invited to attend a three-day excursion of the Association of Foresters of Northern Sweden on July 3, 4 and 5—which we accepted as it seemed the best possible opportunity to see the Swedish forests. In the evening we went to dinner at Minister Wallenberg's, in their home near Drottningholm Castle. The Minister has a fine family and needless to say we had an enjoyable evening. A young man representing the Scandinavian American Trading Company was present also and afterward drove us to Sansten, a famous park in Stockholm. The Minister is interested in the Kramfors Company with big pulp mills, and I believe this trading company represents these mills in America.

We met Baron J. Mannerheim Tuesday, and he invited us to spend two days at his home near Norsholm, southwest of Stockholm. We go down there July 11. He was in America two and a half years ago with J. Chrs. Storjohann of the Billeruds Company, and at that time many of our manufacturers met them. Mr. Storjohann has been resting at Baden in Germany but we expect to meet him and see his mills in western Sweden before we leave for Norway. Baron Mannerheim made arrangements with Minister Wallenberg, who both belong to the Swedish Woodpulp Associations, for us to visit mills near Sundsvall and Harnosand.

In the Paper Making Regions

GAYLE—by the Baltic—July 10, 1922.—The tremendous importance of the wood using industries to Sweden was made graphically evident to the American visitors during a trip into the paper and

(Continued on page 30)

Beater Development

Ever since the first beating engine was invented, some two hundred years ago, paper mill men have felt the need of increasing the efficiency of the beating process. For the last fifty years they have been looking forward to the day when it could be made continuous.

The BIRD CONTINUOUS BEATER ATTACHMENT fills this need in a very practical way. It can be fitted to any ordinary beater tub thereby increasing the output of the beater by approximately 100 per cent.

The BIRD CONTINUOUS BEATER ATTACHMENT is inexpensive.

Let us tell you more about it

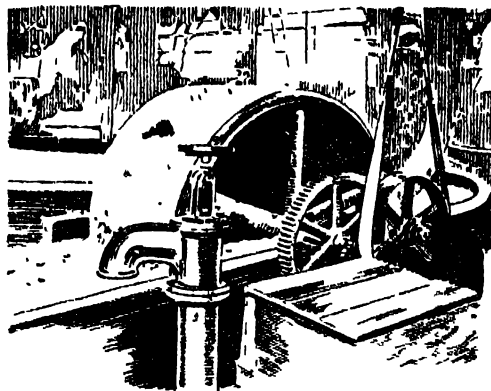
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Canadian Ingersoll Rand Co., Ltd.,
260 St. James St., Montreal, Canada



BIRD CONTINUOUS BEATER ATTACHMENT

88-227

AMERICAN PAPER MEN SEEING THE SWEDISH MILLS

(Continued from page 28)

saw mill region of northern Sweden, and the economies effected by the utilization of what would be considered waste by the American mills were not the least notable phase of Scandinavian methods.

A trip to Sundsvall was the first real visit to the paper making regions of Scandinavia. Taking a sleeper one evening, we reached Sundsvall early the following morning. Mr. J. W. R. Lilliestrale, works director for Wifsta Varfs, A. B. (A. B. means Inc.) was on the train and took us in hand Wednesday morning. At Sundsvall we were joined by K. W. Sundblad, engineer for Wifsta Varfs A. B. and they had a tug boat ready for us in which we went about the harbor, around which are located numerous sawmills (37) and pulp mills. The port of Sundsvall exports annually 150,000 standards (165 cubic feet to a standard) and 300,000 tons (all tons referred to in Sweden are long tons). Minister Axel Wallenberg is president of this company. They own over 500,000 hectares (2.47 acres equals 1 hectare) in Sweden and 10,000 hectares in Norway and drive some of their timber 300 miles.

In driving, which they call "floating" they lose 2 to 3 per cent of the timber, probably because of the many small pieces. About eight million logs came down the river annually. In the Dala Alven region (Alven means river) there are about three cubic feet per log, which in 1920 cost about $2\frac{1}{2}$ Kroners per log (\$1 is now worth about 3.80 Kroners). This company produces annually 57,000 tons of sulphite with 300 tons screenings and 20,000 tons sulphate and the actual time of cooking easy bleaching pulp is fifteen hours, kraft sulphite 18 hours and coal at Sundsvall, English coal, of course, costs 20 to 25 Kroner per ton. They purchase their limestone from Island of Gotland, carried on by boat, of course. Apparently nearly all of the timber and pulp producing companies purchase timber from the government. Auctions are held by the government and timber is carefully described by a pamphlet, divided usually into sixteen classes, from five inches to thirty inches in diameter. In 1921 this company bought in one lot in Jamsland 2939 stems for 8/90 K per stem (about three to four cents cubic foot per stem). The company uses about three million pieces per year. We visited their saw mill, interesting as they do all their sawing with gong saws, saying that circular saws are both wasteful and inaccurate, evidence of their desire for quality. They have one of the finest lumber yards I have seen; no dry kilns, for all lumber is air dried. We then visited the sulphite mills and alcohol plant. The alcohol plant is very modern, making 60,000 liters per week of ethyl alcohol from liquors from the mill. We were entertained at the home of Mr. Lilliestrale at Wifsta Varfs. Both he and Mr. Sundblad speak some English. Mr. Sundblad has drawn plans and helped to construct mills in the United States.

At the Kramfors Plant

The Wifsta Varfs people delivered us by auto to the Kramfors A. B. people at Harnosand on the Angermanalven in the province or country of Vasternorrlands (about the same latitude as northern Hudson Bay). We were met by Birger Sundfeldt, manager of Abbola sulphate mill, son of Gustaf Sundfeldt who is general manager at Kramfors. Twelve million logs came down the Augerman river annually for the fifty saw mills on the river and the six pulp mills. The logs run about four cubic feet to a log, taking about twenty logs to our cord and making the consumption on the river about 600,000 cords. The six pulp mills on the river make about 110,000 tons of pulp, only 10,000 of this mechanical pulp. About 100,000 horse power is available on the river, but it is only partly developed. The Kramfors A. B. of which Baron Mannerheim is chairman of the board or president, has two pulp mills on this river and three saw mills, makes 30,000 tons of strong sulphite and 16,000 tons of sulphate. The company owns about 400,000 hectares of land and the general cut of wood for miles in this section last year was

said to be about thirty per cent. of normal, as the companies had their yards full of high priced woods (sounds like our conditions) but Kramfors cut seventy-five per cent. This company owns mills at Franco near Kramfors and at Umea.

Some Interesting Arrangements

It will not mean much to try and describe other pulp mills on the river. Kramfors A. B. has its own power plant and sells electricity to other plants in the district. Some mills are getting power for \$40 per horse power year. The company employs interesting cable and bucket arrangements for taking saw mill waste to the pulp mills, often carrying waste a mile and more, high in the air on cables. They say it is a cheap method especially during the deep snow of winter. The company produces 1,200 liters of alcohol per year. Dr. Ing. Rudolph Sieber, a German, is their chemist and is very active in their efforts to save waste. Director Sundblad entertained us at dinner in his home, though we stayed at small hotel in Kramfors. The second day we visited two saw mills and the great sorting boom at Sandslan—twelve million logs came through this boom in 1920 and seven million logs in 1922. Logs are marked sometimes eighteen times on one log, with the owner's mark and the logs are separated at this boom which covers 125 acres of water and employs 700 men, and are bundled by machinery so that they can be floated to the yards and lifted by cranes to be stored for winter use. This boom arrangement allows of bundling 100,000 logs in sixteen hours. Small pieces and broken logs are sent to the small power plant near by for fuel. This plant furnishes power and light for the boom as they work sixteen hours in shifts in the fall and must have light. A separate operating company made up, of course, of the various mills on the rivers, operates the boom.

From Kramfors we took train to Mora in Delarna to spend three days in the annual "Norrlands Skogsvardsforbunds Exkursion." This gave the opportunity we were seeking to see the forest and to learn generally as to forest conditions.

Maine's Wood Supply

(FROM OUR REGULAR CORRESPONDENT)

BANGOR, Me., July 24, 1922.—Former Forest Commissioner Colby of Maine estimates that there are 25 billion feet of spruce in Maine six inches in diameter and over, including a small percentage of fir, six billion feet of pine, three billion feet of cedar and one billion feet of hemlock. He also says that there are many millions of feet of the common hardwoods, beech, yellow birch and maple, but a large part of it at present is not marketable on account of lack of transportation facilities.

He estimates that the annual cut of timber for the past decade in Maine has been about a billion feet, and that the annual growth would not equal more than one-tenth of the amount cut. The natural result of annually harvesting 10 times the amount of timber grown will be to reduce the State in the future to complete timber exhaustion.

Mr. Colby is doubtless one of the best informed men in Maine on matter of timber supply and prospects but it is notorious that other authorities on this subject in the past have fallen wide of the mark in their predictions. In 1880, Senator Eugene Hale, speaking in Bangor, declared that Maine's forests were doomed to early destruction. Said he, "Within 40 years the State of Maine will be as bare of merchantable timber as is this platform on which I am standing."

Maine is close to the dead line set by Senator Hale in that speech yet the State is cutting every year quite twice as much timber as it was cutting in 1880. It is the belief of many practical lumber men that the growth each year is more than one-tenth of the annual cut, and that the forests of Maine will continue to serve the people for more than 40 years to come.



More Than a Casting!

A careful selection of various
brands of pig iron.

A chemical analysis of
each car load.

A RIGID SCRUTINY OF MIXING THE VARIOUS BRANDS

A chemical analysis of the mixture.
A daily transverse breaking test.
A frequent tensile test.

*These are the unseen things you
purchase in machinery made by*

BELOIT IRON WORKS

BELOIT, WISCONSIN, U. S. A.



THE SEVEN-PHASED STANDARDIZATION OF PAPER

BY R. E. RINDFUSZ PH. D. SEC. AMERICAN WRITING PAPER CO., HOLYOKE, MASS.

The following is one of the most concise statements of the advantages of standardization in paper that has appeared. It was prepared by Dr. Rindfusz, at the request of the National Association of Purchasing Agents, and was read at the Annual Convention of that organization in Rochester, N. Y., May 16 to 19. Inasmuch as standardization is a particularly vital theme at the present time, the paper trade cannot fail to be interested in reading this explicit statement of the essential phases of standardization.

The economies and benefits of standardization as applied to qualities of goods and processes of manufacture have been so thoroughly demonstrated within the past few years as to be entirely outside the argumentative field. The danger now is that the term is becoming a mere meaningless expression, falling lightly from the lips of the glib-tongued salesman without any comprehension as to its real significance or any knowledge as to whether or not it may honestly be applied to the goods he is discussing.

We have seen the same vitality-robbing evolution manifested with the terms "efficiency," "scientific," and "research," until the mere use of them is becoming meaningless. Such an evolution is common and always to be fought against. The great revivals of morals and religion throughout history have been largely a reawakening of people to the vital significance of terms they were using lightly and without meaning. "The letter killeth, but the spirit maketh alive."

It is therefore my purpose in this short paper to attempt to outline as I see it, and as the company I represent practices it, the vital significance of the term "standardization." I feel safe in assuming that you purchasing agents, whether you buy directly from the paper manufacturer or not, act on the principle that you must know the ultimate source of your supply, and that the business and manufacturing methods of your supplier, even though removed by a middleman, are decidedly your business. This attitude was given great impetus during the recent war, especially by Brig. General McRoberts, head of the War Purchasing Department, who, when he considered buying of middlemen, always sent officers to investigate the manufacturers back of the people he bought of.

Standardization in the paper industry—to embrace its complete substance and vitality—has a seven fold application. These are the standardization of (a) raw materials; (b) processes; (c) product; (d) line (grade standardization); (e) distribution; (f) price; and (g) uses. The entire time allowed for this paper could easily be exhausted in discussing any one of these, but I shall attempt rapidly to take them up in order, indicate their meaning, and particularly to touch upon the advantages through each.

First: Raw Materials

Obviously the raw materials going into a product must be of standard and uniform quality, if the processes of manufacturing and the nature of the product are to remain unchanged. Sometimes it costs a little more to hold rigidly to definite standards of raw materials, but the economies far offset this. No one can appreciate better than you purchasing agents the waste of inefficient buying, the small turnover, the immense idle stocks, the tied up storage space, insurance and investment costs and the deterioration of idle stocks that come when you attempt to buy for requirements that are varying. Under the old method of manufacture, we never knew for any time ahead what was to be made in a particular mill. Therefore, we could not prepare adequately. The amount of money we carried in inventory was largely beyond our control, and spot buying for emergency needs that arose over night due to the arrival of an order was the rule rather than the exception.

Second: Processes

A standard product made in long runs from standard materials allows for the standardization of each step in the process of man-

ufacture. This means the finding out through engineering and plant experience the one best and most economical method of doing each thing and making that "standard practice." It also means the opportunity to have the best equipment for each thing and that equipment completely "balanced" for making the particular product it is turning out.

Since we have inaugurated standardization in our mills, we have released immense amounts of equipment that otherwise were kept for occasional uses. We have been able to move these into other mills where they are finding constant use, and our overhead for idle equipment has been materially reduced.

It must be remembered that in any manufacturing process the various units through which the material has to pass will be in "balance" only within a very narrow range of variation in the product, any considerable change will mean that the same units will not be able to keep up with others and there will be "down" time. For instance, if the time of beating the stock is increased, and it varies from one to eighteen hours in actual mill practice, depending on the grade to be made, either we will have to employ extra beating equipment with its attendant power supply and expense, which would lie idle part of the time, or during the time of increased beating the big paper machine will lie idle waiting for stock. When you remember that a paper machine costs anywhere from \$150,000 to \$500,000, you can see what "down" time means.

Again, standardization allows for long and steady runs. Under the old system it was common practice for us to make changes in the kind, color, weight and size of the paper going over the machine several times a day. Each of these changes meant loss of production and wasted paper, since it takes some considerable time to get stock going over according to specifications. It meant even cleaning up the machine, the beaters, the stuff chest, the Jordan, the screen, changing felt, sometimes changing wires, and making complete re-adjustments. Picture for yourself the expense of such loss of actual running time on a million dollar equipment!

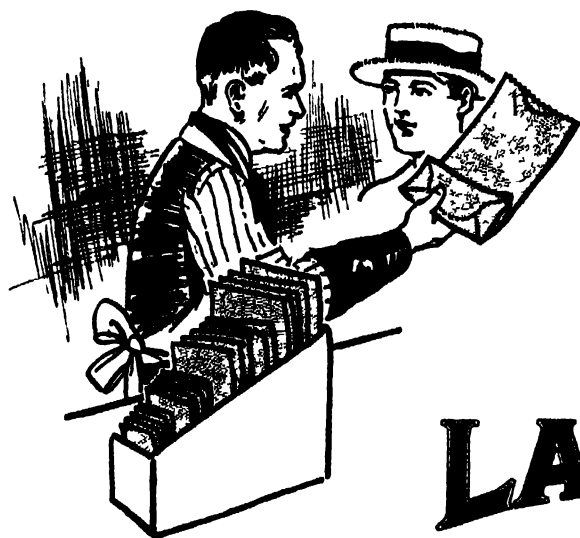
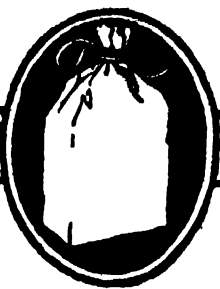
Again, in the short run the entire time of the machine crew is of necessity taken up in getting a product that will "get by." It is only in the long and continuous runs that they can give their attention to the niceties of manufacture which make a little better product, run a little greater speed, which insure for the consumer the desired uniformity and reduced costs and even for the manufacturer turns a small loss to a small profit.

It should be pointed out in this connection that the thing to remember is that each line or trade name of paper, speaking now particularly of bonds, involves on the average three weights, three sizes, and from three to five colors—many of them carry eight or ten colors—thus making a total of twenty-seven or more items to each line. It can readily be seen that there are very few private brands in existence which offer orders large enough to give the advantage of standard processes of manufacture. It should also be remembered that even such a small thing as changing a dandy roll and making two papers which are identical, except for the watermark, involves a considerable cost, since through all the processes following the machine, from the rough paper to the finished product, those two lots have to be kept separate.

Third: Product

It has already been indicated that the standardized manufacture of paper of fixed specifications in large runs allows for the maximum uniformity possible within the limits of manufacturing skill. The uniformity of the product and the knowledge that this is to be made and sold continuously allow the mill to run on a steady production schedule, building up stocks during periods of low demand and depleting them during periods of high demand.

(Continued on page 34)



**"Here Is the
Bag I Want"**

*Make it easy for your salesman,
Mr. Jobber.*

Give him what the grocer prefers.

LAWRENCE GROCERS' BAGS

The grocer likes 'em because Lawrence Bags are so strong, so dependable, so uniform and because his customers prefer them.

Play safe by concentrating on this high-grade line; avoid tying up unnecessary capital and cluttering up valuable warehouse space with "this, that and the other" brand.

James Lawrence, President

THE LAWRENCE BAG COMPANY
MIAMISBURG, OHIO

THE SEVEN-PHASED STANDARDIZATION OF PAPER

(Continued from page 32)

On the unstandardized basis, the only alternative is to follow the feast and famine method.

The definitely standardized paper is made to meet particular needs and built according to definite specifications, and is constantly tested to see that it is up to these specifications and that thorough uniformity is maintained. The ordinary paper buyer and paper user is not a paper expert. We could cut a cent per pound or more in quality-value out of each of our higher grade papers and the ordinary user would be none the wiser. However, if we did it there would exist the same incentive for taking out another cent. In fact, that is just what has been done in the past, with multiplicity of brands, both mill and private, though chiefly private. Papers have been built for the purpose of cutting into the trade of another on the basis of that cent which was taken out of its contents. Consequently, the general trend of qualities has been downward and, as a result, low grade papers are in use for which they are not fitted and the paper industry has hurt itself and its customers.

Under the chaos of paper qualities which still exist, you can buy safely only by one of three methods: (a) Become such a paper expert that you are willing to match your own knowledge and judgment against that of any manufacturer or dealer. (I may add that this involves the equipping and operating of a complete paper testing laboratory); (b) Employ such a laboratory or staff of experts to aid in your buying; or (c) buy standardized papers bearing the manufacturers' mark, guaranteed and made according to definite specifications, so that you may know the quality of these papers and the needs they are designed for.

Fourth: Standardization of Line

So far we have talked about the manufacture of a standardized product. However, no one paper or no small group of papers will meet all the paper needs, nor is it desirable to have such an excessive number of papers that the differences between them become small and meaningless and result in confusion. The ideal is to have just enough papers to meet all the real needs, no grades overlapping, and still no grades so far apart as to leave genuine intermediate needs unprovided for. Standardization of a line means just as much blocking up the holes to meet the real needs as it does eliminating the overlapping grades. There is no such thing as a universal paper, and a utility paper is only a makeshift. The real discerning users demand the *right* paper in each place.

Fifth: Distribution

Since each business can expect ultimately a profit only as it serves, the real end of standardization is to effect economies and efficiencies for the consumer. The distribution of the goods, therefore, must be by a standardized, simple and direct method. The advantages gained by manufacturing economies and the effects of efficient business policies must be passed on without impairment, nor must the identity of the manufacturer and the knowledge of the way he conducts his business be lost to the consumer through an artificial blind wall built up by the distributor. The distributor has an important function for which he should realize a fair profit proportional to the manner in which he serves both his customers and the manufacturers for whom he distributes. He should not be allowed to pose falsely as a manufacturer. Moreover, the mutual knowledge and relationship between the actual producer and the final market of the goods, or consumer, are too vital, and their interests are too common, for any industry to prosper which establishes an artificial barrier between them.

Sixth: Standardization of Price

When values are fixed and known, when the buncombe is taken out of the product and it is made according to definite and open specifications for definite uses, the next step of standardization

should be a fixed and known price, uniform throughout, quality and terms considered. The great medium for haggle-buying is unidentified, unstandardized goods of unknown and varying quality, and in such buying the customer is invariably the loser. The unpriced, unvalued, bastard goods form the favorite medium for the commercial adventurer—the plunder-merchandizer, so-called by Mr. Mahin. All standard goods of fixed price and known origin are the logical mediums for the service-giving merchandizer. The former involves no good will and plays only for the individual and immediate deal; the latter combines the good will of the manufacturer who stakes his all on his product together with the good will of the service-giving distributor, and builds for permanency in business relationships.

Seventh: Uses

It has been pointed out that line or grade standardization must be carried out so that the consumer may be properly served by the goods furnished him. It has also been pointed out that the manufacturer and the consumer must have free and intimate contact so that the knowledge of each may be used by the other; first, by the manufacturer in preparing the goods for the consumer, and lastly by the consumer in the use of the goods. This, we consider the final step in standardization; namely, interpreting the uses of the consumer in terms of the standardized line of goods and passing on to the consumer the information as to the uses for which each grade was prepared, so that the benefits of standardization of the line may be fully realized by the consumer. It profits the consumer nothing that we may have spent a great deal of time and money in preparing an article to meet his need unless he knows about that article and the uses for which it was made. This field is new in the paper industry, but already we have found the most glaring inefficiencies due to improper uses of grades and sizes of paper absurdities, in fact, that seemed almost impossible, and we are devoting our energies most sincerely to the development of this genuine service.

In closing, let me emphasize again that the danger of standardization in the manufacture and distribution of goods is not that we shall over standardize, but that we shall lose the benefits and true significance of the fact by light talking and no doing.

Now this seven-fold application of standardization which we have briefly touched upon brings in its train great advantages and benefits to consumers of paper and printing, to distributors, and to manufacturers, many of which have been suggested. I might, in addition, if I felt warranted in taking your time, round out this paper by a consideration of these manifold results that follow from the seven-fold application. These results, however, are common to all well-organized industries of definite and standard products, with which you purchasing agents are familiar, and regarding which we could learn much from you. One of our reasons for being here is that we may profit by this association with you. I am very glad to say that my intercourse with you during the past few days has been of great benefit to me, and I am grateful to you individually and collectively for this great occasion.

Rush Rebuilding of Vulcanite Roofing Plant

DAYTON, Ohio, July 24, 1922.—The work of cleaning up the debris at the Vulcanite Roofing Company's plant at Franklin, is progressing rapidly. James Tingley, manager of the concern, will arrive from Chicago this week to take up his residence.

F. X. Phoff, mechanical engineer for Logan-Long Company, and John C. McKeown of McKeown Brothers, have arrived to take charge of the building of the new mill.

The felt mill will be in operation before many weeks. The entire plant will be completed in about three months.



Points of Excellence

Made of clean, strong, pure white paper.

Perfectly sterilized. Meet requirements of Pure Food and other existing Laws.

Outside reinforced with pure, fully refined paraffin wax. Strong and rigid.

No wax on inside. Tasteless and odorless.

No glue. Sealed with paraffin under pressure.

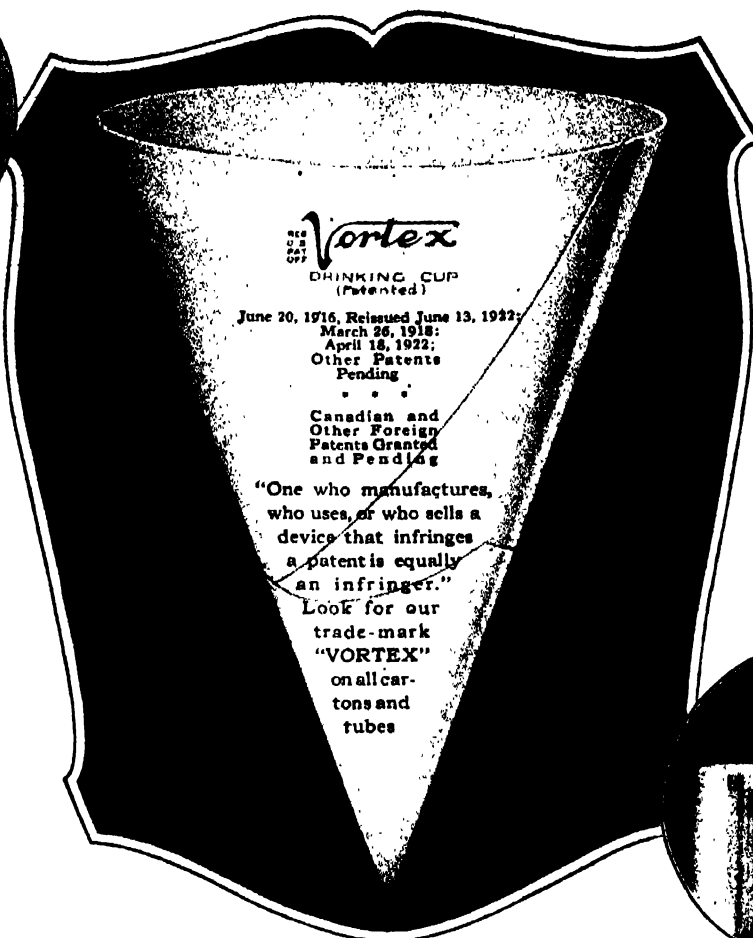
Spiral wrapping reinforces cup. Extra reinforcement at bottom prevents cups sticking together.

Will not absorb moisture or leak when left for an indefinite period.

Conveniently shaped; no holders needed.

Packed in dustproof cardboard tubes; shipped in sealed cartons.

Nested together and dispensed inverted, inside untouched by hands.



Vortex

DRINKING CUP
(Patented)

June 20, 1916, Reissued June 13, 1922;

March 26, 1918;

April 18, 1922;

Other Patents

Pending

• • •

Canadian and

Other Foreign

Patents Granted

and Pending

"One who manufactures, who uses, or who sells a device that infringes a patent is equally an infringer."

Look for our

trade-mark

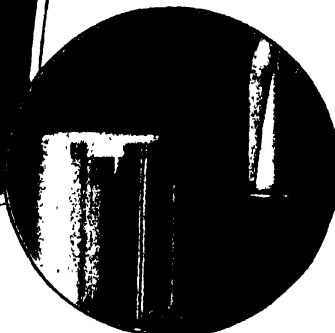
"VORTEX"

on all car-

tons and

tubes

The dispensing tube may be had for attachment to post or wall, or to place on top of cooler. Its simplicity, fine appearance and low cost will please your customers.



It Pays to Push *Vortex*

Vortex Drinking Cups sell easier because they offer every advantage of safety, sanitation and convenience, *plus* a very marked economy.

They are strong, leakless, neat and sanitary. They are absolutely odorless and tasteless. They are dispensed from the simplest container imaginable. Yet they cost less.

You have every advantage of quality and price with the *Vortex* line. The field for

profitable paper cup sales is widened immensely by the unequaled advantages of the *Vortex*.

It is a good thing to know, too, that the *Vortex* is the original, the patented conical cup. It is known nationally and used nationally. Millions of these cups are sold every day.

Look into the *Vortex* proposition thoroughly. It is worthy of your most careful consideration if you seek easier sales, larger sales and more profitable sales. Write us.

THE VORTEX MFG. CO., 421-431 North Western Avenue, Chicago
Canadian Wm. A. Rogers, Ltd., Toronto, Manufacturers and Distributors for Canada

Vortex
Drinking Cups

ANNUAL REPORT OF PAPER DIVISION

WASHINGTON, D. C., July 26, 1922.—Constant Southworth, acting chief of the Paper Division of the Bureau of Foreign and Domestic Commerce has made the following annual report to the Secretary of Commerce for the year ending June 30. The report is of particular interest because it covers the first months of the existence of the division.

General Service to the Paper Industry

Close contacts established with the paper trade. Services of the division gradually becoming known in the paper industry, not so much through advertising them as by work actually performed. Detailed canvass of the exporting experience and needs of individual manufacturers in the field of exporting now under consideration with the committee of the paper industry appointed to co-operate with the Department of Commerce. Information regarding this division regularly contributed to and published by trade journals, in order to keep the industry in touch with anything of special interest which the division is doing.

Questionnaire

Detailed questionnaire on foreign markets for paper and on the paper industry of other countries prepared; now practically ready to send out.

Publications

Confidential circulars and one trade information bulletin published.

"Commerce Reports" and "Exporters' Index"

Circular letter with sample copy of "Commerce Reports" sent to all important concerns in the industry in an effort to enlarge the subscription list of "Commerce Reports" and the membership of the paper industry on the "Exporters' Index."

Rubber Latex

Complete preparations made by means of cable communication with Commercial Attaché Tower, London, England, to import 500 gallons of rubber latex (the milk of the rubber tree) for distribution to various manufacturers interested in making experiments in using this latex in the manufacture of paper.

Organization and History

The Paper Division was one of the last of the commodity divisions to be established during the fiscal year 1922. Its formation was largely the result of the desire of the American Paper and Pulp Association to have a commodity division in the bureau to represent the paper industry. The organization conference took place on January 30th, in the offices of the Bureau of Foreign and Domestic Commerce. At that meeting a committee of ten prominent members of the paper industry met Mr. Hoover and representatives of the bureau. Grosvenor M. Jones was introduced as Chief of the Division.

For nearly three months part of the personnel of the division were able to give only part time to its work. Constant Southworth, who acted as assistant chief, shared his time with the Research Division until the latter part of April. Late in May Mr. Jones left the division to start organizing the work of the Finance and Investment Division, and Mr. Southworth acted as chief until the end of the fiscal year.

Volume of Work

The division has performed an almost steadily increasing volume of work. At the very start there was an unusual amount of correspondence owing to the publicity attaching to the formation of the Division. After that the volume of inquiries somewhat decreased, but from March on, the increase

was fairly continuous. The figures for the weeks ending March 18 and March 25, are fairly representative of the volume of correspondence during the early period of the division's existence. In the week ending March 18, the division handled 14 incoming letters and 32 outgoing letters. In the week ending March 25, there were 17 incoming letters and 24 outgoing letters. In the last week of the fiscal year, the week ending July 1, a greater correspondence was handled than during any previous week in the history of the division. In that week 40 letters were received and 53 sent out. The rate of increase in correspondence evidenced by these figures is a fairly accurate index of the rate of increase in the volume of work performed by the division.

During June the total active personnel of the division consisted of two. It was, therefore, necessary to proceed somewhat more slowly than had been hoped for in the matter of several projects for allying the division more closely with the industry and for securing additional information on foreign markets for paper.

Nature of Work

The raison d'être of a commodity division is its superior facilities for intensive study of the problems of a single industry. Hence the work of the Paper Division resolves itself in a general way into an attempt to maintain close relations with the members and associations of the paper industry, to learn what it can do to help them in their foreign trade problems, and if possible to do it. The Paper Division is the foreign trade service bureau for the paper industry.

The services performed by the division during the fiscal year 1922 were as follows.

The co-operation of the division with trade associations consisted in establishing a working arrangement whereby problems in foreign trade presented by members of the paper industry to trade associations should be referred to this division for consideration, and problems in domestic trade be referred to the proper trade association for consideration; also the co-operation in securing the assistance of trade associations in the operation consisted in the division's acting as a medium to encourage trade associations to furnish figures on production, shipments, etc., for publication in the "Survey of Current Business" work of distributing certain publications of this bureau among members of the paper industry, and in arriving at a general working agreement to assist each other in all possible matters. Mr. Jones and Mr. Southworth attended the annual conference of the American Paper and Pulp Association in New York in the latter part of April, where they were able to meet many men prominent in the paper industry.

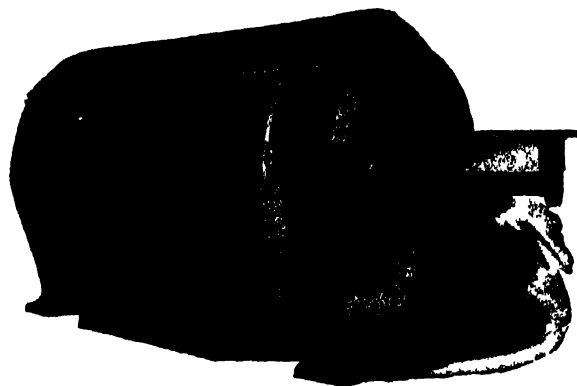
The division has not yet issued many publications on account of the limited personnel available for preparing them. It has maintained a section in "Commerce Reports" and has sent a circular letter with a sample copy of "Commerce Reports" to all important members of the paper industry, in an effort to enlarge the subscription of "Commerce Reports." Two confidential circulars and one trade information bulletin have been issued. The trade press has been kept notified of what the division is doing. So far it has been considered undesirable to publish statements advertising the general services which we are prepared to render the paper industry, because of the fact that the natural growth of the demands on the division, owing to its gradually becoming known in the industry, has more than sufficed to take the full time of the division's personnel. During June a proposed canvass of the paper industry to secure information regarding the experience and needs of paper manu-

(Continued on page 60)

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low
Power
and
Upkeep Expense



Delivers
Rejections Free
from Good
Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING
WRITE FOR FULL DETAILS *CORRESPONDENCE A PLEASURE*

IMPROVED PAPER MACHINERY CO. **Nashua, N. H.**
SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

WHALEN SULPHITE PULPS

Made from the SITKA SPRUCE of BRITISH COLUMBIA
Noted for Fibre, Color and Strength

**SNOWHITE
BLEACHED
SULPHITE**

**GLACIER
EASY BLEACHING
SULPHITE**

**SWAN
STRONG
SULPHITE**

As exclusive Sales Agents for all of the products of the WHALEN PULP & PAPER MILLS, LTD., in addition to stocks at the mills, we will carry large stocks of the above well-known brands in New York, thus insuring prompt deliveries.

Your inquiries addressed to any of our offices will bring prompt quotations by wire.

CANADIAN ROBERT DOLLAR CO., Limited
VANCOUVER, B. C.

U. S. ADDRESSES

Robert Dollar Co., Robert Dollar Bldg., San Francisco.
Robert Dollar Co., 15 Moore Street, New York, N. Y.
Robert Dollar Co., Harris Trust Bldg., Chicago, Ill.
Robert Dollar Co., L. C. Smith Bldg., Seattle, Wash.

FOREIGN OFFICES

Robert Dollar Co.,
Shanghai, Hong Kong,
Hankow, Tientsin,
Ichang, Chungking, and
Pekin, China; Kobe,
Japan; Calcutta, India;
Manila, P. I.; Singapore,
S. S.

New York Trade Jottings

Miss Olive Johnson, office manager of the American Paper and Pulp Association, returned this week from her two weeks' vacation trip to Iowa.

* * *

W. G. MacNaughton, secretary of the Technical Association of the Paper Industry, returned Wednesday of this week from a ten days' vacation trip to Wisconsin.

* * *

J. S. Luneschloss, manufacturer's agent, of 487 Broadway, New York City, announce that they are established with stock of goods in warehouse. Inquiries are solicited.

* * *

J. L. Seiler, vice-president of the Warren Manufacturing Company, 8 West 40th street, New York City, is enjoying a month's vacation in Nova Scotia and will return about August 1.

* * *

Clement & Stockwell, Inc., announce that "L. B. Steward, formerly manager, is no longer connected with the concern. At a later date, an announcement will be made relating to the executive control of the business."

* * *

O. M. Porter, secretary of the Woodlands Section of the American Paper and Pulp Association, will represent the Association at the Babson Industrial Conference to be held next week at Wellesley Hills, near Boston, Mass.

* * *

The F. J. McCarthy Company, manufacturers of paper and wood pulp, have recently incorporated under the laws of New York for \$50,000. The incorporators were A. Rus, A. H. Hanson and W. Hager, their attorney being G. M. Spencer, 120 Broadway, New York City.

* * *

Postal cards from Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association, now making a tour of European paper mills, would indicate that he is probably in Germany by this time and that he has finished his journey through Finland, Norway and Sweden.

* * *

R. & C. Paper Box Corporation of 80 Green street filed schedules in bankruptcy Monday, listing liability of \$24,780 and assets of \$5,19, main items of which are fixtures and machinery, \$4,500 and wagons \$500. Principal creditors listed are Rose Kaplan \$11,263, Morris Smerling \$3,050, William R. Weiser \$4,300, secured.

* * *

Warren B. Bullock, publicity director of the American Paper and Pulp Association, upon his return from Washington last week, reported that the tariff situation is very badly complicated. The paper tariff schedule will not be as badly cut as other items, such as cotton and wool, according to Mr. Bullock's understanding of the matter.

* * *

H. B. Wadsworth, manager of the Mishosha Company, Ltd., 51 East 42nd street, New York City left last Saturday for Japan to make a survey of paper mill conditions there in the interests of his company. Mr. Wadsworth will sail from Vancouver, B. C., July 27, on the maiden voyage of the Canadian Pacific liner, *Empress of Australia*.

Hinckley Fibre Co. Bids in Property for \$60,000

UTICA, N. Y., July 24, 1922.—The various creditors of the Hinckley Fibre Company are shown in the report filed in Federal Court by T. Harvey Ferris, attorney for the receiver Henry R. Beebe, the receiver, also filed his report showing that the Hinckley Corporation bid in the property for \$60,000 subject to the liens amounting to \$441,341.

The liens include the \$250,000 first mortgage of which the Citizens' Trust Company is trustee; \$8,000 balance due Henry C. Ballou on the price of a farm and \$154,295 due the Vermont Products Company for pulpwood.

In his report Mr. Ferris says that the total claims amount to \$1,358,201. However, \$159,016 in claims were rejected leaving total unrejected claims of \$940,020. There were 137 creditors, of whom 35 held claims for less than \$100. Sixty-two creditors holding claims for a total of \$865,857 agreed to the plan of reorganization. The plan is one by which the creditors take over the business.

To Make Improvements at Nashwaak Mills

The following press dispatch dated St. John, N. B., July 24, was printed in the New York Times Tuesday morning:

"The Oxford Paper Company and Bryant Paper Company of New York, joint owners of the Nashwaak Pulp and Paper Mills here, have decided to spend at least \$500,000 in reconstructing the local plant to increase its capacity from sixty to eighty tons of pulp daily. Hugh J. Chisholm of New York, president of the Oxford Company, Felix Pagenstecher, president of the Bryant Company, and other officials left Boston tonight to inspect the plant and prepare plans for the reconstruction work."

It was impossible to verify this report at any of the mill offices of the concerns mentioned in New York before going to press.

To Protect Fish Life in Mill Streams

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 24, 1922.—An effort will be made at the next session of the State Legislature to secure an appropriation to be used for employing chemists who will make chemical analysis of waste from paper mills and other industrial plants that is now dumped into Wisconsin streams in order to find some way of neutralizing poisons, which, it is alleged, is destroying fish life. At a meeting of conservation leaders it was proposed that after a chemical analysis has been made and a remedy found, industrial plants shall at once make use of this remedy and that failure to do so be punished by a fine of \$5,000 and \$100 for each day that waste is dumped into streams.

Enrich Soil With Sludge from Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 24, 1922.—Farmers in the vicinity of Stevens' Point are enriching their thin, barren soil by applying "sludge" or waste from the John Strange Paper Company mill. This sludge is rich in lime which sweetens the soil in that territory. Experiments show an immense increase in productivity in treated soil. It was said at the mill that if the demand warrants a drier will be installed to remove the moisture from the waste which now is dumped on a large tract of land. The tract is covered to a depth of about six feet. No charge is made to farmers who wish to haul it away.

Paper Sales Show Decline for April

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 24, 1922.—The trend of printing sales and paper purchases in the United States during April showed a decided downward tendency from the high point reached in March as indicated in the Graphic chart just issued by the general service department of the American Writing Paper Company of this city. It is expected that the May figures will show a considerable gain over April, and the trend from now on should be continually upward. The reports used in preparing the Graphic chart were submitted by representative printing and lithographing concerns located in various cities of 39 states, the District of Columbia, and the Hawaiian Islands.

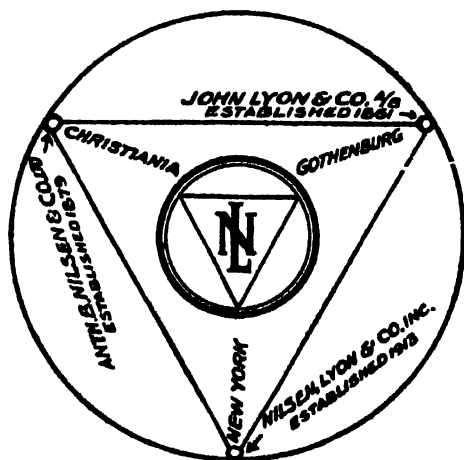
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Editorial

Vol. LXXV

New York, July 27, 1922

No. 4

FIFTY-FIRST YEAR

Dictionary of Paper Terms

Owing to numerous requests for information regarding the "Dictionary of Paper Terms" which has been printed recently in this paper, the PAPER TRADE JOURNAL wishes to state that the publication of these terms will be resumed at an early date. The first installment of this matter appeared in the issue of June 1 and was temporarily discontinued in the issue of June 29 when the terms in A and part of P had been printed.

This matter obviously requires careful handling, and, unfortunately, the ones who are doing the editorial work were unable to finish in time to avoid the interruption in the publication. When the publication is resumed, however, it is hoped that it will be possible to carry it through to the end without another break.

In printing the definitions in the PAPER TRADE JOURNAL the installments have purposely been included in each issue in just four pages, so that these pages might be conveniently saved and the complete installments bound, if desired, in a temporary binder. Numerous subscribers have apparently been carrying out this plan, but have, unfortunately, lost some of their copies. The publishers regret that they have been unable to furnish these missing copies in the case of many subscribers and others who have requested them, as all of the back numbers of the PAPER TRADE JOURNAL containing the installments of the "Dictionary" are out of print.

Ultimately, however, it is intended to incorporate these definitions in Volume V of the *Manufacture of Pulp and Paper*, the series of works now being published by the Joint Educational Committee of the Pulp and Paper Industry of the United States and Canada and thus make it a permanent addition to the literature of the industry which has long been needed. In the meanwhile constructive criticism of the work as it is appearing jointly in the *Pulp and Paper Magazine of Canada* and the PAPER TRADE JOURNAL will be appreciated, so that when finally printed in its permanent form the Dictionary may be as nearly perfect as it is possible to make it under all the circumstances.

Such criticisms and suggestions should be sent to Mr. J. Newell Stephenson, editor of the *Pulp and Paper Magazine of Canada*, Gardenvale, Que. under whose editorial direction the series of text books on the *Manufacture of Pulp and Paper* is being published by the Joint Educational Committee.

Why Paper Needs Protection

The monthly average import price per pound of news print for May according to figures just issued by the Department of Commerce at Washington was \$.0347 as compared with \$.0342 for April and \$.055 for May of last year. As may be observed this indicates that the price of foreign news print is stiffening slightly although it continues very much lower than a year ago.

Current advices from Germany state that the price of news print there has been raised recently and that additional increases are expected almost immediately. This fact as well as labor

troubles in the printing trade there has caused considerable quantities of printing paper to pile up for which foreign markets are longingly looked to, it is stated, especially in view of the more complete demoralization of the mark and the greater value of the American dollar in exchange.

In the light of these circumstances the information just at hand that the officials at Washington, who have for some time past been investigating the situation, have found no evidence of "dumping" foreign news print here, is of more than usual interest. If there has been no "dumping" there has certainly been a considerable quantity of foreign paper coming to America which has seriously disturbed the American market and has served as no slight handicap to American paper manufacturers in employing their workmen on as full time or at as satisfactory wages as they would like to. This is something that the law makers at Washington should seriously consider in shaping the new tariff bill. The American paper industry must have adequate protection from the present irresponsible foreign competition if it is expected to prosper as it should.

The average import price per cord of pulpwood for May was \$10.28 as compared with \$10.65 for April and \$14.68 for May a year ago.

The average import price per ton of mechanical pulp for May was \$26.86 as compared with \$30.27 for April and \$34.14 for May of last year.

The average import price per ton of unbleached chemical pulp for May was \$57.17 as compared with \$57.42 for April and \$85.56 for May, 1921.

The average import price of bleached chemical pulp per ton for May was \$85.47 as compared with \$87.21 for April and \$114.60 for May of last year.

The average export price per pound of news print for May was \$.048 as compared with \$.046 for April and \$.07 for May of last year.

The average export price per ton of wood pulp for May was \$55.64 as compared with \$52.95 for April and \$69.40 for May of last year.

Dr. Baker in Europe

It was a happy thought to send Dr. Baker to Europe. The paper and pulp industry cannot fail to profit from the observations that the secretary of the American Paper and Pulp Association is making in the well known centers of paper making abroad. This is well evidenced from his extremely interesting letter from the Scandinavian countries printed elsewhere in this issue of THE PAPER TRADE JOURNAL. Fortunately Dr. Baker is not only a trained observer but is able to impart through the written word what he sees as though the reader were actually on the journey with him. He would doubtless like to write personal letters to all his numerous friends in the industry but this obviously is not possible. These letters in the trade press cannot fail to serve as good a substitute and certainly more favorable ones than if they came from the pen of a less experienced traveler or one less skilled in the art of putting his thoughts on paper.

The hospitality with which Dr. Baker was received by the Swedes and their courtesy in showing their plants even to a man of the

prominence in the American industry of Mr. George W. Sisson, Jr., who accompanies him, is not surprising. Those of us who have simply met them on business trips here cannot fail to have been impressed with the thought that they would be delightful hosts at home.

Their industry which enables them to prosper in a land not so greatly blessed as many other countries by nature with means for subsistence also apparently made a deep impression on Dr. Baker as did the thorough application to their work which enables them to turn out some of the high class qualities of paper and pulp for which they are noted. Dr. Baker, it will be remembered, is a schoolmaster and it may be expected that he will have considerable to say on these topics to the American paper and pulp manufacturers on his return. It has been believed for some time past that we have been too easily content with simply scratching the soil, as it were, and not willing enough to do the intensive cultivation which Europe has been compelled to do for a long time and which has given her numerous advantages that are bound to be more pronounced in the next few years. After reading Dr. Baker's letter in this issue every one connected with the industry will hope that he will write long and frequently during his trip.

Demand Increased for Canadian News Print

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 24, 1922.—A remarkable stimulus has been given to interest in the news print industry here by the possibility of an early increase in price, consequent on the announcement by the International Paper Company of a new price of \$75 per ton. This has been reflected in increased activity in pulp and paper securities on the Montreal Stock Exchange. As previously intimated most of the news print mills here are under contracts for the balance of the year at approximately \$70 per ton. At present, therefore, the International Paper Company's price is important only as showing the real strength in the position of the mills, and as forecasting an advance at the beginning of the new year. The firming of the price means that any surplus in the market through the heavy increase in production during the past two years has been caught up. It is estimated that on the basis of around 1,000,000 tons a year the Canadian mills will receive an increase in net earnings of \$5,000,000 in 1923. Spanish River, with 650 to 700 tons a day as the maximum output, will benefit to the extent of at least \$3,250 a day by a \$5 increase, or around \$1,000,000 in the year, which is equivalent to 6 per cent on both preferred and common stock. Abitibi with approximately 500 tons a day output will benefit to the extent of \$2,500 a day, or \$750,000 a year, representing \$3 a share on the 250,000 shares. The other larger companies will benefit as follows: Laur-entide, with 325 tons daily, \$487,500 a year; Price Bros., with 300 tons daily, \$450,000 a year; Brompton, with 110 tons daily, \$165,000 per annum; Donnacona, with 100 tons daily, \$150,000 for the year.

Strathmore Paper Co. Makes Improvements

[FROM OUR REGULAR CORRESPONDENT]

WORONOCO, Mass., July 24, 1922.—Workmen are now busy constructing the fourth floor of the new finished paper storage building at the No. 2 mill of the Strathmore Paper Company. During the first two weeks in August the No. 2 mill will be shut down for repairs and a further addition of six dryers will be made to the 106-inch Fourdrinier machine.

Since the installation of the Woodsome system for removing water by condensation from the dryers, the production of paper has been greatly increased and with the addition of six dryers, it will be further increased.

Wortendyke Mfg. Co. to Make Improvements

[FROM OUR REGULAR CORRESPONDENT]

RICHMOND, Va., July 24, 1922.—Plans for extensive improvements in the factory of the Wortendyke Manufacturing Company, of Richmond, to include the erection of a four or five-story L-shaped building which will cost \$100,000 or more, are being seriously considered, and three or four contractors are figuring on the work for the management.

Lewis G. Chelf, vice-president of the company, confirmed the reported plans of the company. He said that the company has been trying to get possession of the property next its present holdings for the last fifteen years. This land was recently purchased from James Sloan, who bought it only a few days ago from Henry Walters, chairman of the board of directors of the Atlantic Coast Line Railroad.

The building proposed will run back from the present building eighty feet to the canal, and will extend from this point 160 or 200 feet in an easterly direction, giving the company an immense new addition to its present plant, the magnitude of which cannot be visualized until it is realized that there will be four or five stories in the building. The property carries perpetual water power rights with it. Four or five concerns are making estimates on the cost. Mr. Chelf had no idea concerning the expense of the proposed structure.

The Wortendyke Manufacturing Company has been in business in Richmond since 1889, manufacturing a very high grade line of paper bags, toilet paper, paper towels, and fiber twines. The officers of the company are:

Thos. E. Jeffress, president. L. G. Chelf, vice-president and treasurer, Ernest B. Livy, second vice-president, and Luther C. Jeffress, secretary.

Johnston-Albershart Buys Leedom Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

CINCINNATI, Ohio, July 24, 1922.—The Johnston-Albershart Company has purchased the C. A. Leedom Paper Company, of Springfield, Ohio. The company will continue to use the present quarters of the C. A. Leedom Paper Company, 108-110 West Columbia street, at Springfield, and will have a stock of its papers on hand at all times in Springfield.

C. A. Leedom, who has called on that trade and handled that territory for many years, will continue to have charge in Springfield, and will also cover Dayton and Columbus.

Keyes Fibre Co. Increases Wages

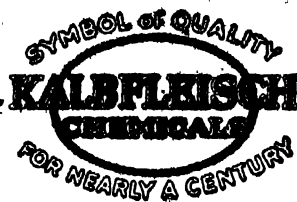
[FROM OUR REGULAR CORRESPONDENT]

WATERVILLE, Me., July 24, 1922.—Dr. George G. Averill, treasurer of the Keyes Fibre Company, manufacturer of paprus pie plates, announced an increase of wages last week for the female employees of the local factory. The prevailing wage has been increased 10 per cent for day work and about 25 per cent for night work, effective July 17. The output of the local factory is increasing and the business is prospering. Keyes Fibre Company, plates go to practically every country in the world.

Paper Rate Hearings to be Held in New York

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 19, 1922.—The Interstate Commerce Commission has announced that a hearing will be held in New York city on July 21, before Examiner J. E. Smith of the commission in case 13,722 of the West Virginia Pulp and Paper Company against the director general. A hearing will also be held in New York before the same examiner on July 24, in case 13,723 of the United Paper Board Company against the M. F. E. railroad.

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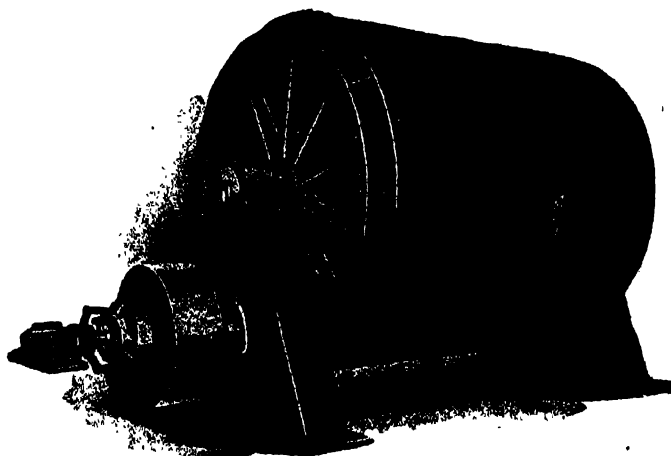
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Conducted by W.G. MacNAUGHTON, Secretary

PAPER TESTING METHODS

Microscopical, Chemical, and Physical Processes Described with an Account of the Apparatus Employed

BY COMMITTEE ON PAPER TESTING TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY

(Continued from Last Week)

8. Folding Endurance

*a. Description** (53) The folding endurance of a paper is measured on a machine in which a strip of paper of definite width and length is clamped. The clamps are held apart under definite tension and the paper is caused to bend back and forth upon itself until the fibers wear through at the line of folding. The number of double folds is recorded automatically.

The folding strength of paper is dependent not only upon the strength and durability of the paper, but also is very largely influenced by the relative humidity. To perform this test in the most accurate manner it is therefore necessary to keep the relative humidity constant for all tests. This can only be done by making the test in a room where the humidity is under control. Where such a room is not available then note must be made of the per cent relative humidity of the air at the time of the test. No tests should be attempted when the humidity is either very high or very low. A relative humidity between 65 and 70 per cent is more easily attained throughout the year and is the standard humidity recommended by the paper testing committee.

The folding factor is determined by the following formula:
Folding endurance

————— = Folding factor
(weight 25x40, 500)

The folding factor will vary between about 0.1 and 200.

b. Calibration. The machine illustrated was designed at the Bureau of Standards for the purpose of calibrating the springs acting on the clamping jaws. It consists of a stand on one end of which the tester can be screwed firmly. On the other end is provided a support, with leveling screws, on which may be mounted a wheel provided with knife-edge bearings. Around the rim of the wheel is a groove of about $\frac{1}{4}$ in deep. This wheel should be made of three plies of wood, glued to prevent warping, and should be so balanced that when mounted on the supports with the back of the knife edge horizontal, it will remain in any position within 45 degrees either side of this without tending to rotate. The table on which the folding tester is mounted should be made large enough so that the machine can be set up with either jaw facing the large grooved pulley. The relation between the height of this table and that of the bearings for the knife edge supporting the grooved

pulley should be such that a line piece of thread resting on the base of the groove in the pulley and attached to the center of one of the clamping jaws, the other clamp being removed entirely, will form a horizontal line. After the jaws have been properly marked for maximum extension according to Reid, Vetch and Sammet, one of the jaws with its spring holder and stand should be removed entirely from the machine and the latter should then be mounted with the end without the jaw and spring toward the grooved pulley. A thread or very fine wire should be attached to the center of the clamping jaw, passed through the reciprocating slot (the latter being locked in its neutral position) over the wheel and tied to a 1 kg weight so that the latter swings free, and the thread falls entirely in the plane of the groove in the pulley. If the reciprocating part be locked in its neutral position and the alignment of the machine and pulley be carefully made, it will be unnecessary to remove that part of the machine which carries the four small rollers and through which the reciprocating part passes. After setting up, care should be taken that the thread holding the weight does not touch any part of the folding tester and that the square shank of the jaw is entirely free from any contact with the sides of the square opening into which it fits. If the spring tension is correct the jaw will be drawn out by the action of the 1 kg weight so that the mark previously made to the square shank will be just visible. If this is not the case the spring tension should be adjusted by loosening the small set screw holding the knurled collar on the end opposite the jaw, after which the tension is adjusted by revolving this knurled collar. The other jaw should be adjusted in the same way after reversing the machine removing the jaw just calibrated and replacing the other.

c. Accuracy. In view of the fact that the folding test is practically confined to a test strip 15 mm long and about 0.25 mm wide that wearing parts tend to make it difficult to maintain uniform conditions of the tester and because of the very marked effect of changes of relative humidity, it is probable that the variations between averages of ten tests, either on the same machine or on

— Note: In connection with the folding tester attention should be called to the fact that it is absolutely essential that the small steel wheels supporting the clamping jaws be perfectly round, well oiled and revolve easily, as the jaws move back and forth. In one case the fact that one of these did not revolve caused an error of 25 per cent in the results.

different machines, will vary from five to fifteen per cent under ideal conditions and that this variation will be considerably greater under the normal testing methods. It is recommended that an average of not less than ten tests on the sample in one direction be obtained to indicate the folding endurance in that direction.

Green Folding Tester

This folding tester was originally devised to apply to pulp sheets made either in the hand mold or by means of the standard pulp sheet mold. The folding tester is, therefore, applicable to any sheet product, irrespective of bulk or tensile strength. It consists of two planes of hardened steel, ground true, which abutt along a straight line, accurate to ground fit. These two planes have a slight inclination downward from the line along which they abutt. They are pressed together along this line by means of springs, set to a specified tension. Running over these planes are two rollers, each parallel with the line along which the planes abutt, set a fixed distance apart, and pressing downward on the planes by a known force, which is fixed by the adjustment of springs. By means of constant speed electric drive, the rolls are run backward and forward across the line along which the two inclined planes abutt and the specimen under test is held between the planes under known and constant pressure. There is an automatic counting attachment which registers the number of double folds of the specimen. The end point is the moment when the specimen has been severed at its center, not when it has been severed entirely.

9. Tensile or Breaking Strength

a. Description. The tensile strength of paper is determined by the load, in pounds, required to break a strip of paper. The tensile strength machine, best known in the paper industry, is the Schopper tensile machine.

In this device a strip of paper 15 mm. (approximately 19/32 in.) wide by 180 mm. long (approximately 7 3/16 in.) is clamped at each end and the clamps are moved apart until the strip is broken. A suitable device indicates the pull in kilograms (approximately 2.2

$(3.73) \times (\text{Tensile strength in kg. per 15 mm. width}) = \text{Tensile strength in lbs. per one inch width.}$

A tensile strength factor may be determined by the following formula:



PLATE No. 28 CALIBRATING DEVICE

An arrangement designed for the purpose of calibrating the spring tension of the Schopper folding tester. (Bureau of Standards, Washington, D. C.)

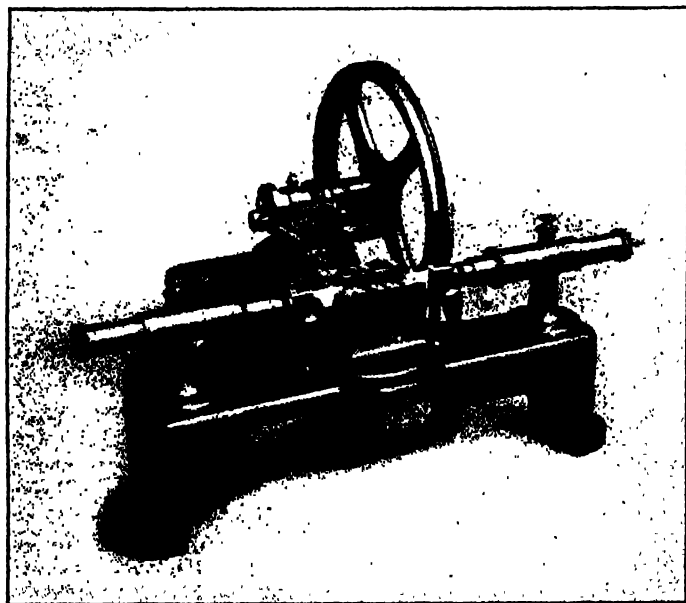


PLATE No. 27 FOLDING TESTER

A device for determining the folding endurance of a strip of paper 15 mm. wide under a tension of one kg. (Foreign Paper Mills, Inc., New York)

lbs.) required to break the strip. As the English units of measurements are used on all other tests, it is recommended that the load in kilograms per 15 mm. width strip, be converted into pounds per inch of width by the following formula:

TECHNICAL SECTION PAGE 42

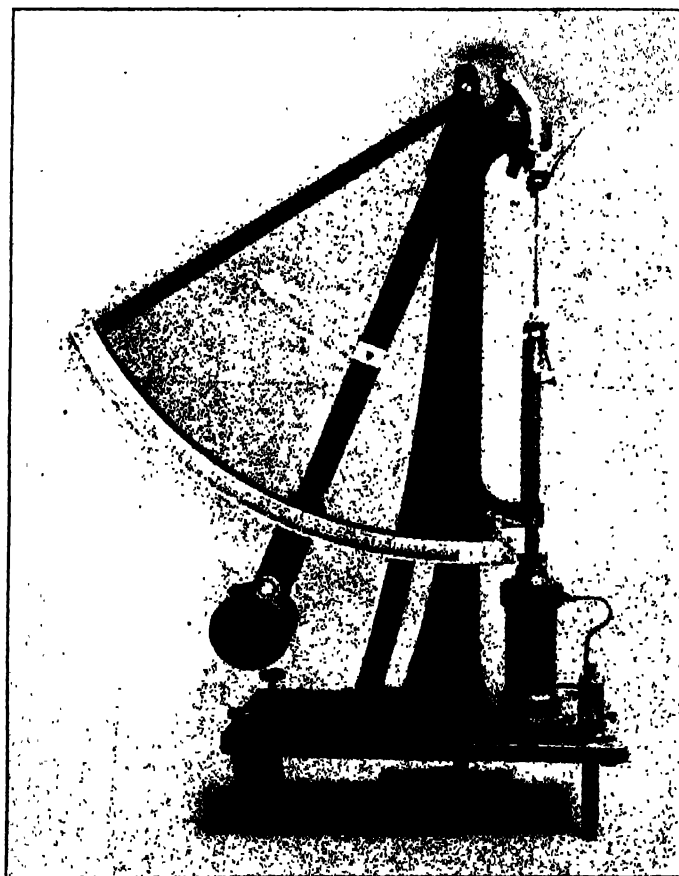


PLATE No. 29 SCHOPPER TENSILE TESTER

Tensile tester operated hydraulically with device for determining the elongation of the paper. (Foreign Paper Mills, Inc., New York).

$(\text{Tensile strength in lbs. per in. width})$

$(\text{Weight } 25 \times 40, 500)$

$= \text{Tensile strength factor.}$
The usual factor for tensile strength is known as the breaking

length. This is the length of a strip which, if suspended at one end, would break of its own weight. The following formula may be used to determine the breaking length of a sample:

$$\frac{(\text{Tensile strength per 1 in. width}) \times (13,889)}{(\text{Weight of a sheet } 25 \times 40, 500)} = \text{Breaking length}$$

in yards.

$$\frac{(\text{Tensile strength per 15 mm. width}) \times (13,899 \times 3.73)}{(\text{Weight } 25 \times 40, 500)} = \text{Breaking}$$

length in yards.

The breaking length factor will range from a maximum of about 11,000 yards down to approximately 2,000 yards.

In this test certain precautions should be observed in order to get accurate results. The width of the sample, the rate of applying the load and the alignment of the sample in the jaws will affect the test. Care should be exercised that the test strip should be cut accurately to the prescribed width and that it should be cut accurately parallel to either the machine or cross direction of the paper. It is recommended that the lower jaw be moved at a rate of 12 inches per minute for the 50 kg. tester. The test strip should be carefully inserted in the jaws, so that the pull is straight, since otherwise, a tearing strain will be introduced that will produce an



PLATE NO. 30 STRESS STRAIN TESTER

A hydraulically operated 200 kg. Schopper tensile tester with recording drum to indicate the stretch on the repeated load. (Bureau of Standards; Foreign Paper Mills, Inc., New York).

error. It is further recommended that the tester should be calibrated and, if necessary, a correction curve and formula be derived.

b. Wet Tensile (122).* This test may be performed on the same apparatus as for the dry tensile strength with certain modifications. Due to the weakness of paper when wet, it is desirable to make the apparatus more sensitive and this is done by removing the weight

at the bottom of the moving arm, calibrating the tester under this new condition and obtaining a correction curve or factor for conversion. It is recommended that a speed of 6 ins. per minute be applied to the lower jaw and that this be kept uniform. It is recommended that before testing, the strips shall be immersed in water

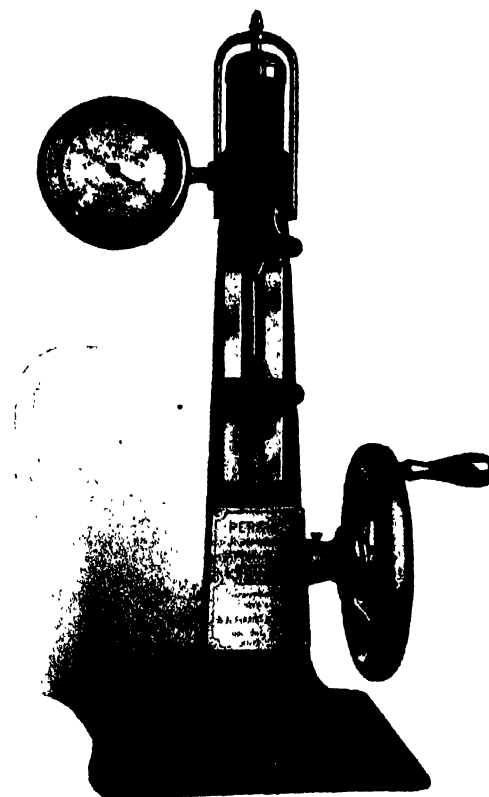


PLATE NO. 31 PERKINS TENSILE TESTER

A tensile tester recently brought out by B. F. Perkins & Son, Holyoke, Mass.

at 70 degrees F. for twenty minutes and that these conditions be rigidly observed, as the test is markedly influenced by both the temperature of the water and the time of immersion. Since the test strips, after wetting, are easily injured and are difficult to place in the jaws in true alignment, extra care is necessary.

c. Stress Strain (20).* In connection with the determination of the breaking strength of heavy bag papers, it has been indicated that a study of the stretch due to repeated application of load is of considerable importance in indicating the quality of the sample for this purpose. The tensile strength of the paper is determined, using a strip one inch wide and 12 ins. long, the load being applied at the rate of 12 ins. per minute. By means of a recording device, shown in the accompanying photograph, the stretch of the sample under repeated loads (ten per cent less than the average breaking strength) is indicated and it is possible to determine the stretch, regain and elasticity of the sample by this method.

d. Elongation at Rupture. Most of the tensile test devices are equipped with a secondary scale to indicate the stretch or elongation at the time of rupture. This secondary quadrant has two scales and gives the stretch in millimeters or, if a test strip of 180 mm. between jaws was used, in percentage stretch. Data available seem to indicate, however, that this elongation at rupture has little significance in evaluating a test sample.

10. Absorption

a. Strip (6).* The absorption of a blotting paper is indicated by the height in millimeters to which, in a given time, a liquid will rise by capillary action, when one end of a strip of paper held

vertically is immersed in water. The height in millimeters to which the liquid (preferably water) will rise in ten minutes is taken as a measure of the relative absorption of the paper.

In making this test, using the "strip" method, a strip of blotting paper 15 mm. (about three-fifth in.) wide and 150 mm. (about 6 ins.) long is suspended, so that the lower end dips 3 mm. (about one-eighth in.) into a pan of distilled water. Besides the strip is a scale reading in millimeters (fractions of an inch), and at the end of each minute for 10 minutes readings are taken of the height to which the liquid rises in the strip. Five tests are made in both the "machine" and "cross" direction and an average obtained. The result is reported as the height to which the liquid will rise in 10 minutes. When necessary, or advisable, the same strips may be subjected repeatedly to the test, which will indicate the decreasing ability to absorb water or ink. In addition, a standard ink of the following formula may be used:

	Grams
Tannic acid (dry)	23.4
Galleic acid (crystals)	7.7
Ferrous sulphate (crystals)	30.0
Dilute hydrochloric acid (U. S. P.; sp. gr. 1.049; 10% HCl by weight)	25.0
Phenol	1.0
Bavarian blue, S. & J. No. 478 or similar suitable dye	2.2
Water to make a volume of 1000 cc. at 15.6° C.	

Note—Any water-soluble basic aniline blue, as Niagara 3B, National Aniline Company, may be used in place of Bavarian blue.



PLATE No. 32 ABSORPTION TEST

A convenient method of making a number of absorption tests of blotting paper by the Klemm method. (Bureau of Standards)



PLATE No. 33 RELATION BETWEEN FILLER AND BLOTTING QUALITY

Curves representing the variation of a practical blotting test with the percentage of clay in the paper

*b. Pipette** (13) In this test a one cc. pipette is employed and is suspended in such a way that the end of the pipette is one-half inch from the surface of the test sample of blotter. The test sample cut four inches square is laid felt side up upon a coarse wire screen, which is supported by a large beaker. This is done to prevent as far as possible the blotting paper from caving in at the center where the liquid fell upon it. (The felt side of paper is the top side of the paper as it leaves the paper machine wire.) Both distilled water and the above mentioned government standard ink are used at the three temperatures of 60, 70, and 80 degrees F.

A stop watch is used to measure the time it took the one cc. of liquid to leave the pipette until it is totally absorbed by the paper. Also the diameter of the circular spot on the paper was measured immediately at the completion of the time reading. Table III shows the results which are the averages of five tests.

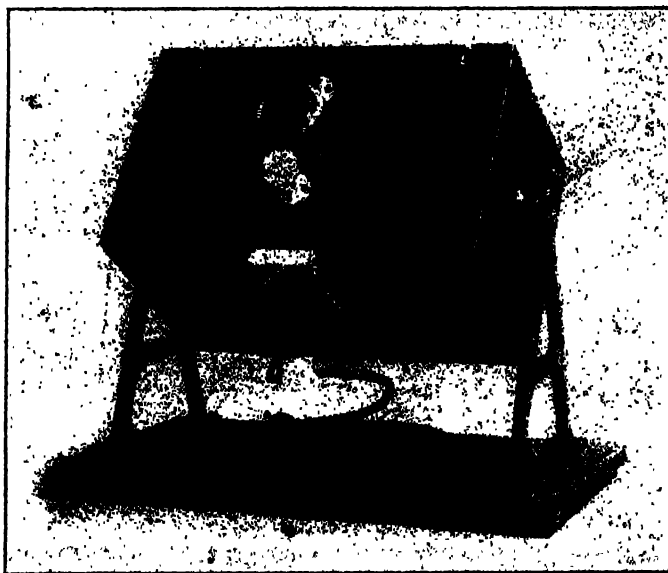


PLATE No. 34 OPACITY APPARATUS

A device for measuring the opacity or translucency of paper by contrast-ratio method. (Bureau of Standards)

c. *Total Absorption** (23). By means of this test, test samples cut two inches square are first weighed on a chemical balance and then dropped with the felt side down on a trough of distilled water and also on a trough of government standard ink. The same temperatures are used for the ink and water as in previous absorbency tests. After a ten-minute period of absorption, the samples were taken out, drained one-half minute and again weighed to determine the amount of liquid absorbed.

d. *Blotting Test** (23). In this test, small strips of blotting paper cut one-half inch wide by four inches long are used to blot signatures that are written with a stub pen on ordinary bond paper. The same signature is used throughout the test and only one signature is blotted at a time. The small size of the test sample causes each blot to be made on almost the same identical spot in the blotting paper. Government standard ink is used as in previous tests and a record is kept of the number of times each test sample will blot the signature before the ink shows signs of spreading on the paper. The felt side of both blotting and bond paper is used throughout the tests, and an average of three tests is taken as a final result for each blotting paper.

It is interesting to note in the accompanying curves that there seems to be an inverse proportion between the amount of ash of the paper and the number of times that the test strip may be used before the ink begins to spread.

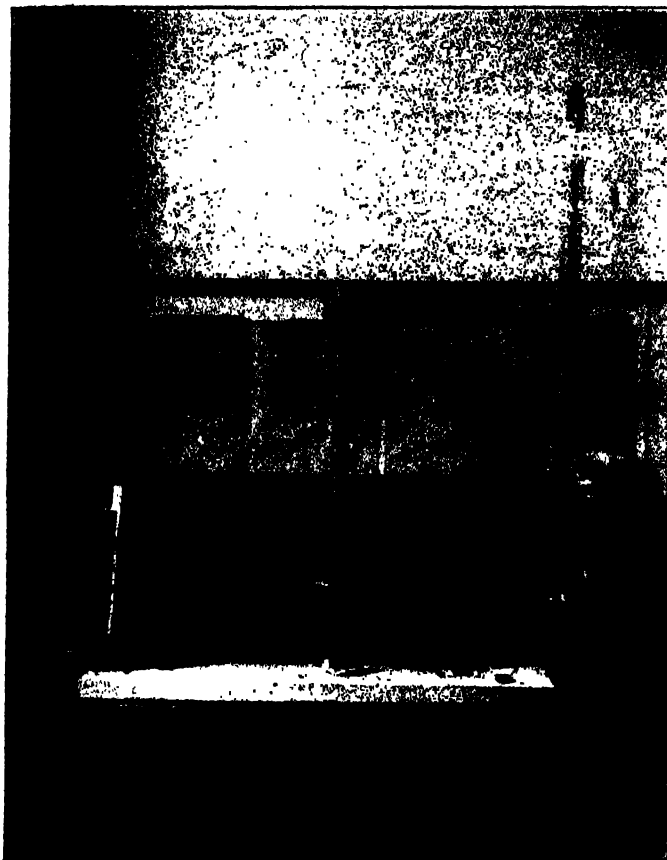


PLATE NO. 35 WITHAM TEARING TESTER

An early type of tearing tester developed for the use of testing bag paper. (G. S. Witham, Sr., Hudson Falls, N. Y.)

11. Opacity and Translucency* (142)

The opacity or translucency of a paper may be measured by the "contrast ratio" method as described in Bureau of Standards Circular No. 63.

The Bureau of Standards has developed and adopted a standard

method for determining the transparency of paper and tracing cloth, which is described in detail in Circular No. 63. Briefly, this method consists in placing a sample of the paper or cloth to be tested over two adjacent surfaces, one white, and the other black, and measuring the reduction in contrast of the appearance of the two surfaces. If the material in question is quite transparent, the contrast between

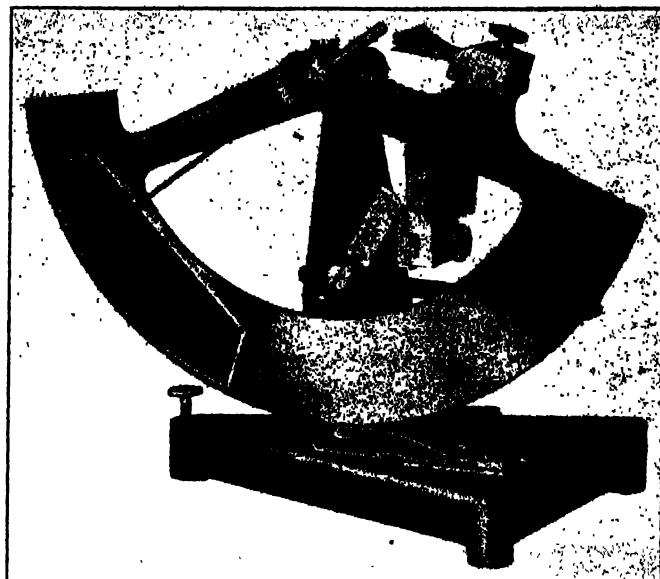


PLATE NO. 36 ELMENDORF TEARING TESTER

A pendulum type of tearing tester which measures the work done in tearing several strips of paper. (Thwing Instrument Company, Philadelphia, Pa.)

the black and white surfaces, as seen through the material, will be quite noticeable; but if the material is opaque, none of the light incident upon its surface will be transmitted and absorbed by the black surface beneath, and consequently, there will be no contrast between the parts of the material covering the black and white surfaces.

In making the measurements, one must use a photometer having a divided photometric field, one-half of which is illuminated by the light coming from the material over the white surface, while the other half is illuminated by the light coming from the material over the black surface. The two halves of the photometric field are then "matched" by usual observation and properly setting the photometer, and the indicated results recorded. A slight computation based on these observations, gives the numerical measurement sought, which is called the contrast ratio. It varies between zero and unity, larger values indicating less transparency.

12. Tearing Test

A continued and increasing interest in the determination of the tearing strength of paper by some mechanical means has produced various devices for this purpose. A brief description of several is given, but there is not as yet sufficient data available to make any recommendations in regard to those which are most satisfactory.

a. *Knife Edge Method** (133). In the tester perfected at the A. D. Little, Inc., Laboratory, the sample to be tested is clamped to the baseboard of the instrument. The clamp has a knife edge along one side and the paper is torn along this edge. The tear is first started slightly and the end of this strip is clamped to the movable arm which is connected to a bellows arrangement with a pressure gage. The arm, bellows and gage are mounted on a movable carriage, operated on an inclined track by means of a lug screw. As this screw is made to revolve, the carriage moves up the incline and, as one end of the paper is attached to the movable arm,

the tearing is accomplished. The force necessary to tear the paper is determined by the pressure shown on the gage.

b. Witham and Case Testers. Both these testers are based on the principle that the force necessary to tear the sample is applied by running water into a beaker which may be connected to the sample in any one of several ways. In the Witham tester* (136, 148), this load is applied by means of running water from a burette into a beaker, set on one end of the pivoted arm, the opposite end of which is attached to the sample. In the Case tester* (128), the movable clamp is merely a spring clothes-pin, to which is attached a small bucket. Water is run into the bucket until the sample is torn.

c. Schopper (129).* The heavy counter weight of the Schopper tensile tester is removed, the test sample is cut one inch wide and four inches long, slit down the middle about two inches, and one of

force is determined from the relation existing between work, length of tear and force. More than one ply of paper in the test sample is recommended and care must be exercised that the width of the test sample is exact and the placing of it in the jaws is carefully performed. The tester is calibrated for 16 plies of paper and if any other number is used, the necessary factor must be applied.

e. Discussion of the Tearing Test. Available data seem to indicate that there are a number of factors which influence the results obtained in making this test by any of the above mentioned methods. These factors are: (1) width of sample and width of paper on either side of the tear, (2) the number of sheets or plies torn at one time and (3) the relative humidity at which the tests are made. Sufficient data are not available for conclusions to be reached in regard to these factors and it is, therefore impossible at this time to make any recommendations in regard to the efficiency or accuracy of these methods or to interpret the data obtained.

(To be continued)

Talc and Soapstone in 1921

The production of talc and soapstone in 1921 showed a great decline as compared with that in 1920. The quantity sold was the smallest since 1908 and was about 40 per cent less than the average for the five preceding years, according to Edward Sampson, of the United States Geological Survey, Department of the Interior.

The total quantity of talc and soapstone sold in 1921 was 126,000 tons, valued at \$1,821,000, as compared with 211,000 tons, valued at \$3,035,000, in 1920. This represents a decrease of 40 per cent in both quantity and value. Vermont, which since 1917 has been the largest producer, maintained its position by producing 38 per cent of the total quantity. New York produced 33 per cent of the quantity sold, but for the first time took second place in the value of its product. Virginia, which produced 14 per cent of the total, ranked next to New York in quantity, but for the first time led in the value of its output, owing to the fact that the soapstone industry in that State was not nearly so much affected as the ground talc industry, on which the other principal producing States depend.

The production and value by States was as follows: Vermont, 48,648 tons, \$438,534; New York, 41,937 tons, \$530,154; Virginia, 17,721 tons, \$601,878; California, 8,233 tons, \$128,188; Pennsylvania and New Jersey, 7,205 tons, \$76,912; North Carolina, 731 tons, \$17,048; Georgia, Maryland, and Massachusetts, 1,959 tons, \$28,737.

The quantity of ground talc sold by producers in 1921 was 106,900 tons, valued at \$1,821,000, as compared with 211,000 tons, valued at \$2,143,000 in 1920. A canvass of the producers made to determine the quantity of talc consumed in 1921 by different industries shows that the paper industry used 38 per cent of the total and that the average value was about \$10.60 a ton. Most of the supply was obtained from Vermont and New York. The paint industry, which requires a high grade of talc, used 23 per cent of the total. Nearly all the supply was obtained from New York, and the average value was about \$14.10 a ton. The roofing industry consumed 18 per cent of the total and drew its supply almost entirely from Vermont. The requirements for talc used in this industry are not exacting, as is shown by the average value, which was only \$8 a ton. The rubber industry used a large quantity of talc for filler, and in 1921 consumed 9½ per cent of the total. Vermont furnished most of the supply, which had an average value of about \$9.50 a ton. The textile industry used about 4 per cent as a filler for cotton cloth. The average value was about \$9.40 a ton. Only 2½ per cent of the domestic output was used for toilet powder, the demand for talc for that use having been supplied largely by imported material. California supplied most of the demand for domestic talc for this purpose and the average value was \$18.60 a ton.

The latest figures available show that in 1920 the United States furnished about 65 per cent of the world's supply and consumed about 68 per cent.



PLATE NO. 37 SCHOPPER TEARING TESTER * (129)

A tensile tester adapted for making tearing tests with the heavy weight removed and with an off-set lower jaw. (Foreign Paper Mills, Inc., New York).

the slit ends is placed in each of the jaws. The pawls on the rack are raised, the lower jaw lowered at a uniform rate and readings taken at intervals of ten seconds. As in the case of the wet tensile test, the tester must be calibrated for the new conditions and to avoid a rubbing effect when several plies are used, the lower jaw may be offset as indicated in the accompanying photograph.

d. Elmendorf (131, 134).* The principle upon which this tester is based is the fact that the tearing force is determined indirectly by means of the work required to tear a sheet of paper. The moving segment of the instrument may be considered to be a pendulum, whose swing is retarded by the tearing of the paper. The tearing

THE COLORING OF PAPER ON THE PAPER MACHINE

A Review of the Recent Patent Literature on the Subject, Indicative of European Practice

This article is an abstract of a much larger treatise on this important subject by the well-known German paper chemist, Dr. Emil Heuser, editor of *Der Papier-Fabrikant*. In the abstract there are given descriptions of the latest developments in the process of coloring paper on the paper-making machine, as depicted in the patent literature. These processes reflect European practice entirely, and particularly German practice. The article is accordingly of real practical value, as the coloring of paper on the papermaking machine is a German development.—Translator's note.

I. Coloring the Paper Web on the Paper Machine by the Addition of Solutions of the Coloring Matter

In Ger. Pat. No. 278,923, the *Farbwerke vorm. Meister Lucius & Bruening*, have patented a process of producing sporadically shaded paper or paper showing variegated spots which are highly colored in comparison with the rest of the product. This is accomplished by allowing dilute solutions of the coloring matters to flow over the top of the paper pulp, which lies in flake form on the wire of the paper machine. The waste pulp solution or back water that drains from the wire, containing considerable proportions of strongly or partly colored particles, is used over again. The coloring matter precipitates in the depressions and colors the corresponding part of the paper a deeper shade than the raised portions. In this manner a shading effect is obtained on the paper. When the back water is admixed with other color solutions or when other colored fibers are added, or particles of lake colors or mineral colors, then the shading effect can be heightened. The paper web can be provided artificially with high and low spots so as to accentuate the color designs on the same.

Coloring Paper on Both Sides

The same company has (see Ger. Pat. No. 268,243) a process of producing color shades on both sides of the paper. This is accomplished by subjecting the under side of the paper to the action of a roll, etched with a design or any other suitable arrangement, whereby the paper is impregnated with such liquids as alcohol, acetic acid, formic acid or other fat solvents which are soluble in water. This treatment is preliminary to passing the paper through the dye bath. When the paper is dyed, the color is absorbed very quickly and fixed in such a manner that exactly the same design in the same color tones appear on both the top and the underside of the paper. This ingenious process will produce a paper which has an accurate image of the colored design appearing on the top of the paper, on the under-side of the same, without the dye having to penetrate through the body of the paper itself. For this reason the process may be applied to the finished paper as well as to the paper in the course of formation on the paper-making machine. The process is improved in a subsequent patent (see Ger. Pat. No. 283,371, March 8, 1914). The improvement consists in the addition of hygroscopic substances, such as magnesium chloride, to the aqueous solution of the fat solvents. This has the effect of bringing out the designs in sharper outlines and in stronger colors.

Combined Coloring and Sizing Process

The process, which is described in Ger. Pat. No. 296,089, deals with the simultaneous coloring and sizing of paper in the presence of protective colloids. The peculiar advantage of this process is that the presence of these protective colloids enables the use of dyestuffs, which would otherwise be precipitated out of solution. This refers particularly to colors which would have this mutual effect on each other and permits the use of both acid and basic dyestuffs

in a common solution. In a latter patent (see Ger. Pat. No. 297,535, July 19, 1914), the process is improved so that the paper is colored only, and not simultaneously sized. The protective action of the colloid protectors takes place in an exactly similar manner. The process is of considerable practical significance for certain particular types of paper, such as parchment paper. The newly discovered possibility of combining various coloring matters of entirely different properties makes it possible to produce new and surprising effects.

Mottled or Marbled Paper of Variegated Colors

Paper and cardboard can be given a marbled effect in variegated colors by means of the process described in Ger. Pat. No. 322,773. The practical method of carrying out this process is as follows:

This paper, which has the power of absorbing liquids and which in any case is sized on one side or else combined with a layer of sized paper, is subjected to treatment on the well-known color printing machine or through any other of the known methods of dyeing or color printing, where a mixture of three aniline colors is used, which as a general rule always differ somewhat in specific gravity or in solubility—such colors as blue, red and green. The colors are completely dried or almost so by means of air, so as to secure as uniform a product as possible. Then the colored surface is subjected to sporadic spraying with water. This may be carried out with the aid of different devices. One of the favorite ways of doing this is to spray the water through a stencil design. Effects corresponding to the design are produced. The form and size of the water spots are also a determinant factor in the design. The process can be carried out with hand labor.

The marbling of the paper can be effected later by careful, finely distributed spraying of the well-known marbling agents, such as shellac or by the immersion of the paper in a bath containing this material dissolved in volatile solvents.

II. Coloring the Paper by Means of Rolls

In Ger. Pat. No. 283,752 there is described a process of producing color effects on paper by means of color rolls. This paper, which is designed specially for documents, postage stamps, revenue stamps, etc., is made in the regular manner on the paper machine. The web of paper, which leaves the couch roll in the wet condition, before it is allowed to pass over the drying cylinders, is colored with the dyestuff by means of a ruling device in straight full lines, broken lines, dotted lines, undulatory lines or else in some definite design. The color penetrates into the wet paper and is absorbed therein before the paper reaches the drying cylinders. The result, obtained in this manner, is a paper with blotted, faint lines in the place of the sharp defined lines that are usually obtained. These lines can be produced just on one side of the paper only, or else by allowing the color to penetrate completely through, the under-side of the paper is colored as well. The color is applied to the paper by means of rolls, which are etched in lines or designs. The lines can be reproduced on the paper either in the length or across the paper web. A small color wheel can also be moved back and forth across the width of the paper, as it moves through the paper-making machine, in the manner that a weaver's shuttle works. All sorts of special effects can be produced in this manner.

In Fig. 1 there is seen a four-drum paper machine, which is furnished with this coloring device. The paper web *b*, which is still in the moist condition, is led over the suction box *c* by means of the screen *a*. The web of paper is then passed between the couch rolls *d d* and finally reaches the felt *e*, by means of which the paper is led to the presses *f* and the other parts of the paper machine,

*Translated from the German in *Der Papier-Fabrikant*, March 19, 1922, 325-331. By Iemar Ginsberg, B. Sc., Chem. Eng.

which, however, are not shown in this figure. Right behind the couch rollers *d d*, the ruling arrangement *h* is located. This is either a roll or a small color wheel which applies the dyestuff on the wet paper. The colors, which are absorbed into the paper, are reproduced in different kinds of lines or designs. The absorption of the color into the paper can be regulated so that any degree of blurring of the design can be secured.

The color roll can be located at different parts of the machine. One condition, however, must always be fulfilled—namely, that the color is applied to the wet paper, so that it can penetrate it and be absorbed by the fibers to produce a blurred effect.

Lucius and Bruening Process of Applying Color by Means of a Color Roll

This process is patented in Ger. Pat. No. 347,940. Solutions of the dyestuff or dyestuffs are allowed to flow over a rotating cylinder. Emulsions or suspensions of the coloring matters may be used as well. An uneven distribution of the color is required for the production of various color designs on the paper or on the paste-board products. The cylinder is then brought in contact with the paper web. The solutions of the dyestuffs may contain additions of alcohol, glycerine, acetic acid, gum tragacanth, casein and other similar substances, or emulsions, lacquers, suspensions, for example, of bronze, mica, etc. Natural unevennesses in the paper or those produced artificially serve to diversify the character of the designs produced thereon under certain conditions.

The application of the color to the cylinders can be carried out in an irregular fashion, as for example by a more or less oscillating or circular motion of the color-applying device, or else the irregularity of the coloring can be produced on the cylinder itself, for example with the aid of etched rollers, trailing parts that trace out lines and figures, the influence of liquids and air pressure.

This process can be operated on the paper in both the wet and dry condition in the corresponding part of the paper-making machine. For instance, one of the drying cylinders in the paper-making machine can be used for this purpose, when the color is applied to that surface of the cylinder which is not covered with the paper. Similarly, a specially constructed cylinder can be located at any other part of the machine.

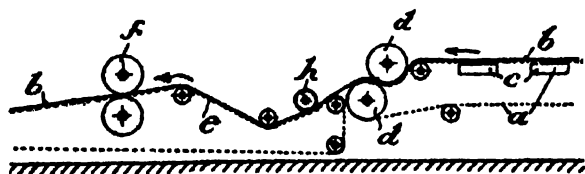


Fig. 1

The process can also be applied to finished paper, if the paper is first moistened sufficiently or treated in any way to render it properly absorbent. The necessity of this operation may be avoided when substances that are able of rendering the paper absorbent are incorporated with the color bath itself. These exert their action at the same time that the paper is being colored. This method of conducting the process is very effective.

III. Coloring and Producing Designs on Paper by Means of Differently Colored Paper Pulp

Such a process has been patented in Germany (see Ger. Pat. No. 266,236). The coloring and design effects are produced by means of at least two differently colored or embossed paper webs, which are produced independently of each other and which are superimposed on each other. One of these paper webs possesses the same design that is embossed on the other paper web, but cut out like a stencil, so that the design on the under surface paper will be visible through it and the whole will have the appearance of a single sheet of paper.

One of the many different ways in which this process can be carried out is shown in diagrammatic form in Fig. 2. The pulp, which flows out of the tank 1 on to the screen 2, is carried around on this frame-like screen, which is beveled in the center and which passes around at least four corners rolls, 3, 4, 5 and 6. Between the two rolls 4 and 5 the paper pulp is subjected to action of drops of a liquid which fall upon it at a sharp angle from the dropping device 7. The drops are ejected under pressure and when they strike the surface of the paper, the angle of the impact is very sharp. The effect of these drops is to produce a grouping of the fibers in the form of an oval with a compressed under-edge. On the other hand,

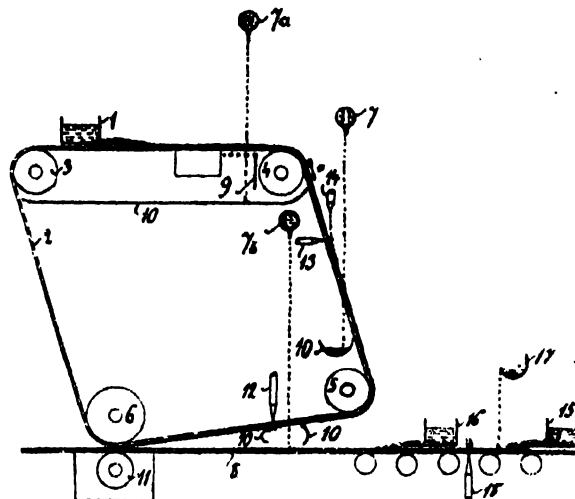


Fig. 2

if the dropping arrangement is located at the point 7a, so that the drops of water are ejected and fall on the paper web on the horizontal section of the screen between the rolls 3 and 4, where the layer of paper pulp is very thin, then the impression of the drop on the paper is circular in form and after the couching of the paper, this impression takes the form of a circle, which increases in thickness from the circumference towards the center.

Again, if the drops are allowed to fall on the paper as it passes between the rolls 5 and 6 from a dropping arrangement 7b, then the drops of water pass through the screen and in their passage through it they absorb a certain amount of paper pulp. These drops of pulp-entrained water may be permitted to fall on another paper web 8, which is specially prepared for this purpose and which runs horizontally under the regular web. The drops of pulp are then subjected to a couching action between the rolls 6 and 11 and are agglomerated with the paper web.

In the place of the drops of water, atomized water or air pressure can be used in this process. The atomized water and air pressure is applied through the nozzles 12 and 13. In this manner the desired splitting up of the fiber layer is accomplished or the centrifuging of the particles of the paper fiber. The action of the nozzles may be periodic in nature and likewise the nozzles may be given a lateral motion while they are operating. A resilient surface 9 is provided and located at the under surface of the screen which is free from paper pulp. This is used to attain special effects and is employed only when the dropping arrangement at 7a is employed. Catch pans 10 are placed at suitable points in the apparatus to catch the liquor which flows off from the screen and the paper web.

At 17 there is located a water-feeding device which overruns at periodic intervals and allows a little water to trickle down and wet the paper web. This device is arranged to secure special effects on the paper. The nature of these effects is dependent on whether the drops of water strike a horizontal web screen or one inclined at an angle to the horizontal. Other special effects are obtained when strongly diluted and differently colored paper pulp is allowed

- to drop down on the paper web which is then subjected to the action of an air blast. Water and variously colored paper pulp can also be sprayed on the layer of paper fiber, which is carried past the nozzle on the wire, inclined a definite angle to the horizontal. Peculiarly displaced designs are produced on the paper in this manner.

Coloring of the Paper on One Side Only

When water is sprayed against the paper web on the under side of the screen, while the paper web is being subjected to the action of suction to remove the water, then breaks of a serrated outline are obtained in the fibrous structure. If the fibers resulting from the disturbance of the paper web by means of a pressure arrangement, which is located at the under side or inner side of the screen for example, by means of air pressure or a liquid under pressure applied through the nozzle 13—which fibers are partly raised off the surface of the screen, if these fibers and groups of fibers are sprayed with color solutions through the atomizing nozzle 14, so that the color strikes the fibers at a sharp angle, then the paper web is colored on one side only. After the paper has been couched, the design made by these fibers appears to lie right on the surface of the paper. The water which has penetrated through the paper web and paper pulp entrained therewith can be recovered by means of a current of air and thrown back again on the screen. When this is done, the design produced on the paper is more indistinct. Then when two such paper films of different colors, which has been subjected to this action, are placed one on top of the other to form a paper web, then the marbling effect on the paper is three-colored.

Producing Cloudy Effects on the Paper

Peculiar marbling effects are secured by periodic spraying of diluted, variously colored paper stocks through pressure tubing, arranged at different angles with respect to the paper web. The spraying is carried out on different sides of the paper from movable nozzles and with the use of a reflecting surface, which is firmly fixed right back of the wire. Likewise, peculiar disarrangements of the layer of fibers is obtained by means of different movable air-pressure and water-pressure nozzles, which are arranged in various positions with respect to the paper web.

Production of a Tiger Skin Effect on the Paper

This effect is obtained by the use of water pressure nozzles, which are suspended in pendulum fashion over the oblique part of the screen so that they make a sharp angle with the paper web. The action of these water pressure nozzles is periodic. The same effect may be secured with the aid of a roll, which is provided with longitudinal felted stripes and which presses against the paper web, as the latter is passed between it and a couch roll. Other means for breaking through the fibers or shifting them to one side, so as to produce various marbled effects in the paper, are rigid textile fabrics, cord nets and rolls, which are enveloped in felt; furthermore, pieces of whalebone, arranged on a roll or in strips and similar cutting or rotating devices are also used to produce the same effects.

Stenciled Design on Paper

Various designs of regular form are reproduced on the paper web by means of stencils which, for example, may be made out of rubberized cloth. These are located directly under the length of the screen, covering its entire upper surface. Through these stencils, the pressure fluid is allowed to act on the paper web, so as to produce a regular design on the paper. The stencils can be arranged in an endless chain, moving over the surface of the screen. They may move faster or slower than the screen itself or they can be moved from side to side. When the stencils are used, it is also possible to use a suction roll or drum in the place of the pressure devices to produce a definitely designed disturbance of the layer of fibers. When a pressure roll is employed, it can take the place of a guide roll (either 4 or 5) at the same time.

A layer of fibers, which has been couched from the wire on the felt, can be worked up in such a manner that the felt plus the layer of fibers run over a suction roll, which is provided with slits, through which the fiber is sucked through the felt in strips. Now, if atomized water under high pressure is allowed to act on the layer of fibers at a sharp angle, then the fibers, which have not been sucked through, are moved together. A design which is produced on the paper in this manner shows thickened edges on one side.

Various Colored Marbling Effects

Variegated colored marbling effects can be produced by the use of a number of different screens, on which several layers of fibers are formed and then superimposed one on the other to form the paper web. Circular screens are also suited for this purpose. The screens must not be allowed to dip into the paper stuff too far in carrying out this process.

Double Marbling with Fourdrinier Wire

The figure, see Fig. 2, also shows how the fourdrinier wire is used in the process to produce double marbling effects on the paper. The paper stuff, which is designed for the layer of fibers which will be disarranged, flows out of a feed trough 15 on to the wire 8.

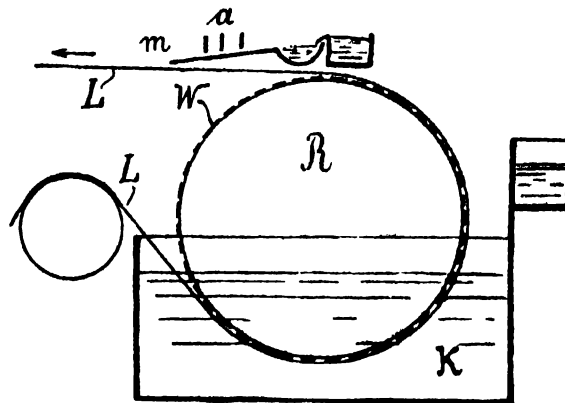


FIG. 3

The disarrangement of the fibers in this paper layer is accomplished with the aid of the various devices which have already been described above. By these means, which are arranged in various ingenious ways, almost every effect which is obtained with the framed screen can be reproduced with the fourdrinier wire. In the case which is represented in the figure, the liquid spray, which is emitted from the trough 17, and the air pressure or water pressure, which streams through the screen from a nozzle tube, arranged on the under side of the screen, are used as means to this end. On this layer of fibers, which has been disarranged by one or the other of these methods and in certain cases also by the aid of stencils, suction or pressure rolls, paper stuff is allowed to flow for the production of the regular paper web. In order to secure papers which are colored on both sides, a second disarranged paper layer which, for example, may have been produced on the framed screen arrangement, is brought upon the upper face of the paper web by couching or by spraying, in the manner which has been described above.

Marbling of Paper by Means of Round Cylinder Screen

A method of obtaining papers which have the marbling effect on one side only is described in Ger. Pat. No. 325,920. The apparatus used for this purpose is shown in Fig. 3. The paper stuff, which is very much diluted with water, is fed to the stuff-box K and is kept at a definite level therein. Between the round cylinder screen R and the wire L, which is led around it, there is placed a piece of oilcloth W. The latter has the design, which it is desired to transpose to the paper, cut out on it, so that the water runs away through the cuts, while the paper fibers are sucked through and

are taken up by the wire in the form of the design, cut out in the oilcloth. The paper stuff, fed from another source, then runs past the froth separators *a* to form the regular paper layer, which is joined to the paper web, which has been formed on the round cylinder screen by means of the wire *L*.

Crepe Paper

Crepe paper can also be manufactured by means of the arrangement which is shown in Fig. 3. In this case the piece of oilcloth *W* is removed. As is well known, a circular screen takes the fibers up in a different direction from the fourdrier wire. The two paper webs, which are joined together at *m*, then possess fibers which lie in directions considerably different from one another whereat the crepe effect is produced.

Velour Paper

In order to manufacture the so-called velour papers by the aid of the apparatus, which is shown in Fig. 3, finely ground clipped hair which has been worked up thoroughly in the hollander—no wood flour or particles of fabric are added—is fed to the stuff-box in which the cylinder *R* turns. The wire *L*, which runs around the cylinder *R*, takes up a layer of this hair, the suction removing the water. The hair web unites with the regular paper web at *m*. In this manner a paper is made which has the appearance of plush or velvet.

IV. Colored Marbling Under the Influence of Heat

In Ger. Pat. No. 283,690 is a process for producing colored marbling effects on paper. This process depends on the observation that the color solutions, which are brought on the surface of the paper, in particular such solutions of aniline colors, can be changed by the influence of heat during drying. It was also observed that under these conditions a mixture of colors, consisting of dyes of different specific weights, when brought on the paper, will tend to be split up into the individual constituents. For this purpose two or more colors are mixed together and the mixture is applied to the entire surface of the paper or in spots. Thereupon the paper, which is still in the wet condition, is dried with the uncolored side on a heated cylinder, which is provided with any desirable embossed design, or on a plate of similar nature. The drying of the parts of the paper which are in direct contact with the embossed design on the roll takes place faster, as may be expected; that is, more heat is applied to the paper from these high spots on the embossed roll than to the other parts of the paper. In this manner the color on the paper is caused to take the design that is embossed on the roll and at the same time it undergoes a decided change, due to the resulting strong contraction of the dye mixture. At the same time that the color on the paper in places corresponding to the embossed design on the roll is being changed by the heat, the rest of the color on the paper forms itself more or less accurately around the design on the paper. The latter action is enhanced particularly by placing the paper, which is colored with the wet dye, unevenly over the embossed roll; thorough moistening of the paper is also advantageous.

When this is done part of the aqueous solution of the color runs into the depressions, whereat there are no places on the paper which are more or less free from color and also in these depressions room is given to the color mixture to separate into its various parts. Moreover, during the process parts of the coloring matter that is on the paper are dried at spots, particularly through the heat which streams from the corner edges of the embossed design on the roll; this again induces new actions to take place. In this manner there is, accordingly, obtained variegated colored designs of a plastic appearance in accordance with the number of colors used in the color mixture. The colors that are used for this purpose are the aniline dyestuffs, which are admirably well suited for coloring designs on paper by this process. These dyes vary somewhat in specific weight, and although this is very

small, nevertheless it is sufficient for the purpose, as only a very slight difference in this property of the dyes is requisite to bring about the desired effects.

Coloring Paper at the First Drying Cylinder

In Ger. Pat. No. 289,688 there is described a very advantageous process for coloring paper on the paper-making machine. This is done by subjecting the colored paper web, which is only slightly dehydrated to pressure by means of an endless felt against the first drying cylinder, which is heated as strongly as in the regular process of paper-making. The result is the formation of blisters on the surface of the paper, and these blisters are colored either darker or lighter than the rest of the paper according to the nature of the dyestuffs used, due to their coming in contact with the hot surface of the drying cylinder while the rest of the paper does not. In this manner marbling effects and designs are produced on one side of the paper only, but they are visible from both sides.

Description of the Apparatus

In Fig. 4 there is shown a method of arranging the apparatus for carrying out this process. The paper web *c*, which comes out of the wet press *a*, is led over guide rolls *d* and *e* to the drying cylinder *f*, to which steam is fed at a comparatively high pressure

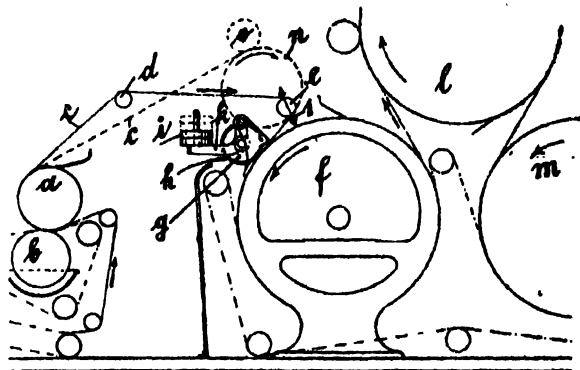


FIG. 4

and whose surface is consequently strongly heated. The paper passes through the free air in reaching this drying cylinder. Then it is pressed up against the heated surface of the cylinder for a short time only. This is accomplished by the aid of a felt which is seen at *h*, which is wound tightly around a roll *g*. Pressure is applied against the paper web by means of this roll, so that the contact between the paper web and the heater surface of the cylinder is a very close one. The amount of pressure that is applied by the felt is regulated by means of weights which are arranged on a lever arm and which cause the roll to press against the felt with varying pressure in accordance with the weight that rests on the lever. Consequently, the felt can be made to exert a greater or less pressure against the paper web in accordance with the marbling effects that it is desired to produce and the thickness of the paper. The longer or shorter the time the paper web runs over the drying cylinder before it comes in contact with the pressure felt, the smaller or larger the blisters that are formed on the paper and, correspondingly, the smaller or larger the size of the marbling designs. In order to be able to change this factor during the operation of the paper-making machine, the paper web guide roll *e* is made so that it can be shifted in any desirable direction by means of the device *l*. The drying cylinder can be used without any covering, or else, as is indicated in the figure, it can be covered with a felt.

In the place of the cylinders, any of which can be used for the marbling operation, all being of the identical regular size, it is also possible to use a special small cylinder *n*, which is provided with a pressure felt and a pressure roll *o*. These are represented in dotted lines in the figure.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

A. Properties, Chemistry and Testing of Raw Materials and Finished Products.

Contributions to a more Exact Knowledge of the Chemical Composition of Spruce Wood.—Peter Klason. *Paper Trade J.*, lxxiv, No. 18, 45-51 (May 4, 1922).—Translation by Carl L. Fineman and W. E. B. Baker. A detailed historical review of the subject is given. Barium ligninsulphonate was prepared from waste liquor from the manufacture of spruce sulphite. Molecular weight determinations were made. Various groups in the compound were determined. The author concludes that spruce lignin belongs to the aromatic series of compounds, that it contains several nuclei, that it is related to coniferyl alcohol, and that the solubility of the lignin in acid calcium sulphite depends partly on its content of active carbonyl and partly and mainly on the ethylene groups. In the waste liquor the sulphurous acid is partly loosely and partly strongly combined.—I. G.

Lignin Sulphonic Acids.—R. H. McKee and G. Barsky. *Paper Trade J.*, lxxiv, No. 20, 46-48 (May 18, 1922).—As a result of an investigation to determine whether there are one or several substances which occur in the wood which react with bisulphite and sulphurous acid, it is concluded that there are several of these constituents. Details of the experimental work, which was based on a series of fractional precipitations, are given.—I. G.

The Purchase of Steam Coal by Specification.—H. Bell. *Paper Trade J.*, lxxiv, No. 12, 50-51 (March 23, 1922).—A discussion of the various points that have to be watched in the purchase of steam on specification and the significance of the different parts of the specifications.—I. G.

D.—Groundwood Manufacturing and Equipment

Cellulose from Wood.—R. Kron. German Patent 351,987.—The raw material is passed through crushing rolls which crush the wood completely and produce a fibrous fleece or individual wood fibers in a thinly flattened condition. The material can be treated with chemicals in an edge mill or grinding mill. Only very dilute solutions of the chemicals need be used.—I. G.

E.—Acid Processes of Pulp Manufacture and Equipment

Determination of Sulphurous Acid and Lime in Sulphite Liquors.—B. Deutsch. *Wochbl. Papierfabr.*, liii, 314 (Jan. 28, 1922); Translation by C. J. West in *Paper Trade J.*, lxxiv, No. 20, 49-50 (May 18, 1922).—See this journal, lxxiv, No. 21, p. 59, May 25, 1922.—I. G.

F.—Alkaline Processes of Pulp Manufacture and Equipment

Utilization of Caustic Liquors from the Treatment of Straw.—W. Colman. German Patent 316,147, Aug. 6, 1916.—The black liquor is reboiled, mixed with various vegetable residues and subjected to the action of air in order to obtain a mass that can be spread over the ground. In this manner there is obtained a stable fertilizer which can be used at any time.—I. G.

K.—Paper Manufacturing and Equipment

Notes on the Beating of Paper Pulp.—W. Alison, A. Pirie & Sons, Ltd. *Paper Trade J.*, lxxiv, No. 19, 55-57 (May 11, 1922).—Discussion of the theory and practical application of beating.—I. G.

Calculating the Power Consumption of Beaters.—F. M. Bouvier. *Monit. Papeterie Française*, lii, 788-790 (Dec. 15, 1921). Translation by A. Papineau-Couture in *Paper Trade J.*, lxxiv, No. 13, 45-47 (March 30, 1922).—See this journal, lxxiv, No. 24, p. 52, June 15, 1922.—I. G.

Utilization of Latex in Papermaking.—F. Kaye. *Paper*, xxx, No. 7, 29-32 (April 19, 1922); *Paper Trade J.*, lxxiv, No. 17, 47-48 (April 27, 1922); *Paper Mill*, xlv, No. 18, 10, 12 (May 13, 1922).—Considerable interest has been attached to the use of rubber latex in paper making. It is thoroughly incorporated with the fibers in the beater, and various experiments with different kinds of stock have shown that the whiteness of the paper is not impaired. The admixture of latex with the pulp improves the texture and feel of the paper and increases the mechanical strength and folding resistance. It makes the paper water-repellent and increases the electric resistance and dielectric properties. The mechanical strength of papers made from different stocks compared with the same products when mixed with rubber latex is given in tabular form. Latex paper has been found to absorb dyes readily and for a given depth of color less dye is required than in ordinary paper. The cost of making latex paper is shown. (See next abstract).—I. G.

Manufacture of Latex Paper.—F. Kaye. Can. Patent 216,957, March 21, 1922. (Cf. preceding abstract.)—Rubber-containing latex (preserved with ammonia, formaldehyde, etc., if necessary) is added to the beater furnish after the fibers have been beaten to the extent required for the quality of paper aimed at. After thoroughly mixing the latex with the pulp, a coagulating agent is added, the nature of which depends on the nature and state of the latex, such as acetic, formic, or other suitable organic or mineral acids, or small quantities of mineral salts. The paper may be sized as usual before or after adding the latex. The stock is run on the paper machine in the usual manner. The dried paper can afterwards be vulcanized (if desired) by any suitable process, such as the "Peachey" cold vulcanizing process.—A. P.-C.

Loading Paper With Mineral Salts.—F. Reichard. German Patent 349,882, March 16, 1921.—In loading paper with such heavy materials as gypsum, barium sulphate, etc., only a small part of the substance is retained by the fibers by the methods in use up to the present time, due to the fact that these mineral salts settle quickly because of their weight. To counteract this effect water-glass solution is added to a suspension of the heavy filling materials, which are in as fine a state of subdivision as possible. When the silicic acid of the waterglass is precipitated, it holds these finely divided heavy salts in suspension. It was found that the addition of such materials as acids, salts, magnesium chloride liquor, improves this action considerably.—I. G.

Sulphate of Alumina for Papermaking.—M. Mueller. German Patent 352,289.—The aluminous material is cooked with sulphuric acid, either under pressure or at atmospheric pressure. The acid or solution of bisulphate is used in excess. Coagulation of the mass is prevented by immediate dilution with water and neutralization of the free acid with alkalies. Magnesia is used for this purpose, as the sulphate is equally effective as effective in paper sizing as the sulphate of alumina. Considerable savings in time, material, and heat are effected by this process. The residue from this treatment is available as filler for the paper, and as it is free from acid and sand it does not injure the beating tackle.—I. G.

Hard Sized Paper.—Holzverkohlungs Industrie A. G. German Patent 339,594, March 28, 1916.—The paper pulp is mixed with a small amount of alkaline solutions of the condensation products of hydroxyl naphthenic derivatives with formaldehyde or other aldehydes. A precipitating agent, for example an acid, is added. The resin that is used for sizing the paper may be produced by the solution of alpha-naphthol in a soda liquor, to which

hot formaldehyde solution is added gradually. The reaction must be controlled. The condensation product of alpha- or beta-naphthol and formaldehyde can also be prepared by melting the naphthols and then adding the formaldehyde slowly. Paraldehyde can be used as well. The mass is heated until it thickens, at which point a further addition of formaldehyde results in the evolution of gas. The resin thus prepared is dissolved in the alkalis. The same resin can be obtained very easily by dissolving alphanaphthol in a little hot acetone to which first about 1% of sulphuric acid has been added and then the formaldehyde. The solution is then evaporated to obtain the resin.—I. G.

The Use of Waterglass in Sizing Paper.—T. E. Blasweiler. *Papierfabr.*, xix, 1217-1223, 1322-1327, 1505-1511, 1542-1546 (Oct. 28, Nov. 18, Dec. 23 and 30, 1921). Compare *Papierfabr.*, xix, 625 ff, 1921.)—Both in sizing pulp with waterglass and in working this material in conjunction with other sizing agents in coating paper, good results were obtained on the paper machine as far as the suction was concerned, there was no sticking at the presses and a smaller consumption of wet felt was noted. Rapid and complete sedimentation took place in the waste waters from the paper machine. The paper was found to possess greater strength and a better feel. This paper can be sized properly with a greater use of filling materials. Paper sized with waterglass will take color well; it will not absorb too much of it and the color will appear bright on the surface of the paper. I. G.

Regulating the Heating of Dryers.—M. Landraud. German Patent 348,856, Jan. 6, 1921. The valve on the steam pipes leading to the dryers is regulated automatically by the rotation of a roll which guides the paper to correspond with the degree of dryness required.—I. G.

Origin of the So-Called "Mildew" Injury to Paper Makers' Felt.—J. MacInnes, F. C. Huyck & Sons. *Paper Trade J.*, lxxiv, No. 14, 41-42 (April 6, 1922).—By the usual methods of bacteriological investigation the formation of "rust" or "acid" spots on felts was traced to the presence of one kind of bacteria, which is very closely related to *Bacillus mesentericus*, and which has apparently not been described in the literature. The spores are very resistant to heat and drying. No satisfactory method of sterilizing wool has been developed so far, as any of the procedures which were effective in destroying the spores was injurious to the wool. Molding is prevented if the felts are kept in a dry place at a moderate temperature. Microphotographs of sound and infected fibers are shown.—I. G.

Thin Coated Paper Containing Groundwood.—P. Ebbinghaus. *Wochbl. Papierfabr.*, lii, 4233 (Dec. 24, 1921).—The difficulties encountered in the manufacture of such paper are discussed. They arise mostly in the grinding of the wood pulp, and they can be avoided by the use of a special fine grinding machine. The paper making itself is difficult to carry out.—I. G.

The Manufacture of Ivory and Alabaster Board.—H. Postl. *Wochbl. Papierfabr.*, lii, 3865-3868 (Nov. 26, 1921).—A description of the manufacture of ivory and alabaster paper board, discussing raw materials, treatment in the beater and on the paper machine, and describing special apparatus such as presses, gluing machines, etc. The various adhesives employed in making these products are discussed; their properties are examined and their suitability for the purpose determined.—I. G.

A New Development in Manufacturing Waterproof Paper or Board.—L. Kirschbraun. The Flintkot Co. *Paper Trade J.*, lxxiv, No. 19, 48-50 (May 11, 1922). (See next abstract).—I. G.

Waterproof Paper and Process of Making Same.—L. Kirschbraun. English Patent 174,114, Sept. 7, 1920. The non-adhesive waterproofing emulsion described in U. S. Patent 1,302,810 is made by a continuous process in which molten asphalt, or the like (e. g.,

pitch, tar, resins, etc.), at about 163 to 177°, is introduced simultaneously with a thin stream of an aqueous suspension of colloidal mineral matter, e. g., clay, into a previously prepared quantity of the emulsion, contained in a mixer and kept in violent agitation by a rapidly revolving agitator fitted with helical blades, the temperature of the mass being maintained at about 66°. The operation may be conducted under pressure when asphalt having a high melting point is used. The finished product, which should contain about 50% asphalt, 40% water and 10% clay, is withdrawn from the bottom of the mixer, diluted with water, passed through a fine strainer and pumped into storage tanks provided with agitators. This emulsion may be added in varying quantities, up to 193° of asphalt on the weight of dry fiber, to beaten pulp and the stock may be run on a Fourdrinier or cylinder machine. The sheets may be heat-dried, in which case the asphalt particles coalesce to form a continuous film throughout the sheet, or air-dried in which case the particles retain their individual character and help to strengthen the sheet.—A. P.-C.

Hard and Other Special Papers.—*Papierfabr.*, xx, 165-169 (Feb. 22, 1922).—The methods of making these papers are described, including data on the amount of different raw materials used, details of the mechanical operation of the process, etc. Amongst the special papers mentioned are Jacquard paper, drawing paper, book printing paper, paper for making stamps, card paper, etc.—I. G.

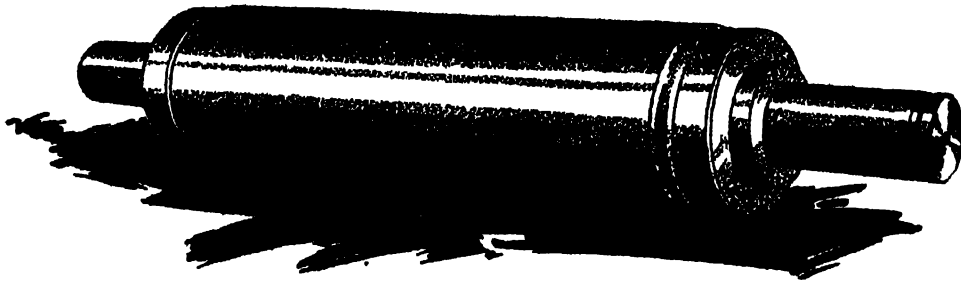
Gluing Paper by means of Various Adhesives.—Exportingenieur für Papier und Zellstofftechnik GmbH. German Patent 351,204. A band of paper is rolled up in the solution of the adhesive and allowed to remain for a suitable length of time. The paper from a number of rolls is then glued together to form one sheet. Generally the layers are all of the same sort of paper, but in special cases fabrics or wood veneers may be used. Various materials such as colored powders, bronze powder, sand, wood meal, talc, etc., may be sprinkled on the surface. Tar, asphalt, cellulose solutions, adhesive lacquers, etc., may be used as adhesives.—I. G.

Flexible Waterproof Paper.—L. Heilbronner. German Patent 303,829; English Patent 143,235. "Japan paper" is treated with a hot or cold solution of gelatine, agar-agar, potassium dichromate, glycerine or calcium chloride and ammonium carbonate; then it is dried and coated with a thin film of non-drying oil and train oil. This coating of oil prevents the washing out of the glycerine from the impregnated paper. The ammonium carbonate is added to reduce the inflammability of the paper. Several layers of the paper may be pressed together to form a single sheet for special purposes. This product serves as a substitute for leather or rubber in their application as membranes for gas meters and long distance gas igniting apparatus.—I. G.

Proportioning Chart for Paper Makers.—N. G. Near. *Paper Trade J.*, lxxiv, No. 13, 50 (March 30, 1922).—A proportioning chart is described which is useful for multiplying and dividing formulae used by paper makers.—T. G.

List of Abbreviated and Full Titles and of Addresses of the Journals from Which Abstracts Have been Prepared for This Issue

Monit. Papeterie Française.	Le Moniteur de la Papeterie Française. 154 Boulevard Haussmann, Paris (8 ^e), France.
Paper	Paper. 251 West Nineteenth St., New York City.
Paper Mill	The Paper Mill and Wood Pulp News. L. D. Post, Tribune Bldg., 154 Nassau St., New York City.
Paper Trade J.	Paper Trade Journal. 10 East Thirty-Ninth St., New York City.
Papierfabr	Der Papier-Fabrikant. Otto Elsner, Oranienstr. 140-142, Berlin, S. 42, Germany.
Pulp and Paper	Pulp and Paper Magazine of Canada. Cardenvale, Que., Canada.
Wochbl. Papierfabr.	Wochenblatt für Papierfabrikation. Güttinger-Stein in Biberach a. d. Riss, Württemberg, Germany.



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PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending May 31, 1922, and for the Nine Months Ended May 31, 1922, as Compared with Corresponding Months of Two Previous Years

IMPORTS—PAPER.

PAPER AND MANUFACTURES OF.	May				Eleven Months Ended May 31			
	1921	Value	1922	Value	1921	Value	1922	Value
Books, Maps, etc., and other printed matter	Free	\$461,653		\$420,639		\$4,781,840		\$3,721,217
Desakomania paper, not printed	Dut.	151,845		186,338		2,206,199		1,981,123
Lithographic Labels and Prints (except Post Cards)	Free	68,924		5,683		247,926		86,273
Paper Hangings	Dut.	\$70 663	65,886	189,536	83,341	1,051,806	762,669	697,192
Photographic	Dut.	23,166		31 203		333,455		390,900
Printing Paper—	Dut.	108,881	21,954	134,949	70,051	1,340,242	345,354	2,245,627
News print	lbs Free	88,476,716	4,866,318	162,703,171	5,649,320	1,382,670,830	76,913,439	1,687,526,475
All other	lbs. Dut.	91,229	21,532	346,103	22,144	4,180,412	546,147	691,160
Post Cards, Souvenir	Dut.		9,582		3,865		179,188	
Pulp board, in rolls	lbs. Dut.	4,380,355	129,240	6,671,898	154,195	69,179,247	2,210,085	44,313,622
Surface-coated	lbs Dut.	39,511	13,875	92,203	21,720	1,100,584	304,963	663,854
Wrapping	lbs Dut.	1,111,999	40,334	6,066,041	225,585	6,017,489	469,672	24,834,594
All other	Dut.		232,644		294,118		3,267,808	
Total Paper, and Manufactures of		\$6,106,953		\$7,158,402		\$9,588,745		\$77,776,674

CRUDE PAPER STOCK.

Rags (except woolen)	lbs Free	6,077 217	\$102,203	14,484,596	\$195,208	142,895,409	\$5,494,796	185,869,064	\$2,708,460
All other kinds of paper stock	lbs. Free	6,967,863	162,183	11,108,841	284,912	145,984,077	5,070,071	124,573,719	2,761,991

WOOD PULP.

Mechanically ground	tons Free	6,314	\$215,558	10,380	\$278,868	159,846	\$11,924,911	192,848	\$5,083,491
Chemical—									
Unbleached—									
Sulphate	tons Free	6,374	\$590,418	13,947	\$855,531	117,700	\$14,471,792	199,148	\$12,010,252
Sulphite	tons Free	5,457	422,093	18,155	979,747	213,987	29,661,878	287,797	16,134,058
Total	tons Free	11,831	\$1,012,511	32,102	\$1,835,278	331,687	\$44,133,670	486,945	\$28,144,310
Imported from—									
Norway	tons			3,065	\$162,197	6,273	\$996,761	15,984	\$819,881
Sweden	tons	320	\$17,590	3,504	182,469	81,023	11,499,883	184,682	10,077,439
Canada	tons	10,631	934,157	23,370	1,357,290	217,814	27,646,182	225,090	14,046,200
Other countries	tons	880	60,764	2,163	131,322	26,577	3,990,844	61,189	3,200,700
Bleached—									
Sulphate	tons Free					8,357	\$1,178,657	5,435	\$348,613
Sulphite	tons Free	3,795	\$134,952	14,021	\$1,198,360	84,643	15,484,894	132,233	11,456,776
Total	tons Free	3,795	\$134,952	14,021	\$1,198,360	93,000	\$16,663,551	137,668	\$11,805,389
Imported from—									
Norway	tons			3,963	\$331,389	9,990	\$2,255,910	22,640	\$2,066,267
Sweden	tons			1,107	82,705	12,483	2,116,087	17,903	1,279,876
Canada	tons	3,795	\$434,952	8,800	774,188	62,505	10,827,254	80,835	7,300,382
Other countries	tons			151	10,078	8,022	1,464,300	16,290	1,158,864

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS.

Colors or dyes, n.e.s.	lbs. Dut.	306 558	\$307 735	237,452	\$364,135	3,202,443	\$4,668,406	3,090,736	\$4,472,734
Imported from—									
Germany	lbs.	31,742	\$32,187	80,552	\$144,293	1,142,459	\$1,620,459	1,800,679	\$1,990,650
Switzerland	lbs.	264,376	257,188	139,331	202,190	1,223,443	2,054,288	1,302,945	1,965,173
United Kingdom	lbs.	8,599	15,090	5,588	4,394	273,318	157,545	284,206	275,933
Other countries	lbs.	1,811	3,270	11,981	13,258	563,223	636,114	202,906	240,978
Indigo—									
Natural	lbs. Dut.	270	\$248	2,523	\$1,962	131,448	\$299,431	23,142	\$28,588
Synthetic	lbs. Dut.			200	553	256,804	103,065	434,316	267,531
Alizarin and alizarin dyes	lbs. Dut.	9,516	14,505	43,180	53,930	323,630	380,147	386,280	596,527
Lactarene or Casein	lbs. Free	2,016,616	171,735	701,114	56,948	11,563,966	1,521,879	9,696,978	631,177
Line, Chlor. of	lbs. Dut.	1,039,023	26,964	383,624	6,727	4,225,044	135,304	17,340,995	263,949
Magnesite, not purified	tons Free	5 188	45,125	14,557	219,050	43,353	705,167	69,050	1,203,598
Potash, Hydrate of	lbs. Free	648,886	43,880	2,303,679	118,476	2,679,701	365,434	13,762,776	609,780
Sulphur or Brimstone	tons Free	1	74			1	104	2	141
China clay or kaolin	tons Dut.	8,459	105,705	19,610	210,170	242,600	2,752,523	175,811	1,840,995

PULPWOOD.

Rough	cords. Free	11,445	\$146,528	17,068	\$154,979	316,816	\$4,001,094	132,413	\$1,747,862
Peel	cords. Free	43,777	648,666	56,611	584,807	1,043,936	15,515,608	527,629	5,767,706
Roled	cords. Free	2,549	52,976	7,708	96,912	154,935	2,908,242	63,697	940,454
Total	cords	57,771	\$848,170	81,387	\$836,698	1,515,687	\$22,424,944	743,739	\$8,456,022

(Continued on page 58)

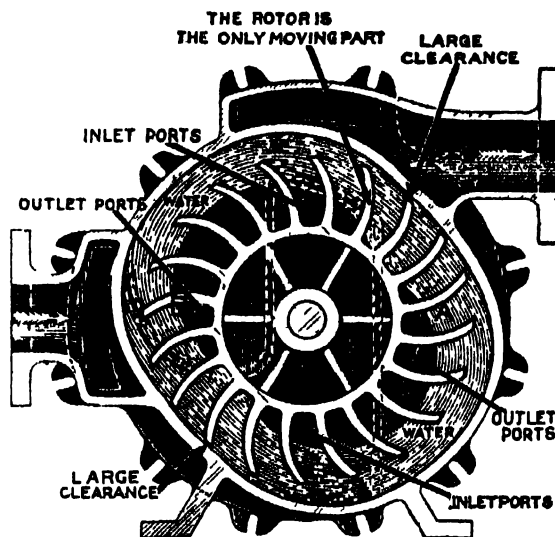
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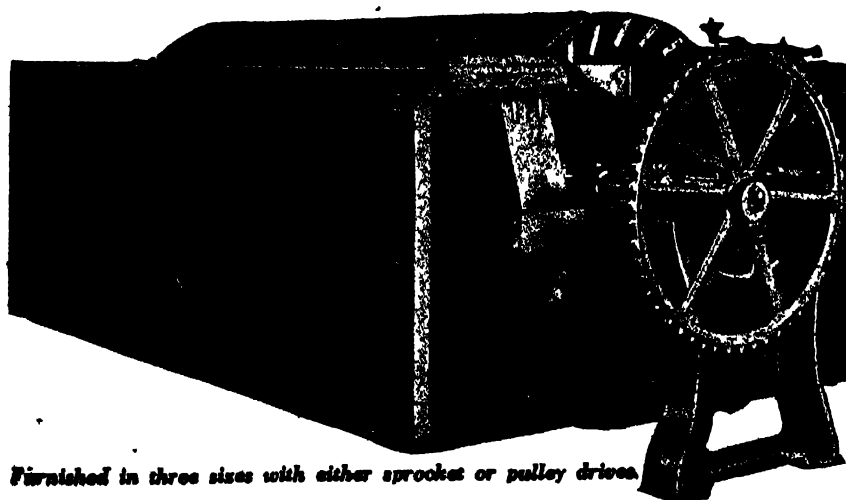
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THE WOOD'S MACHINE

Distinctive performance and intensified confidence in this machine as a Pulp Thickener, Save-All, Washer or Water Filter insure success in its building.

On the market but a few years, our installations number more than **Eighty-five**. **Twenty-nine** sold the past year.



Furnished in three sizes with either sprocket or pulley drives.

MADE BY
GLENS FALLS MACHINE WORKS
GLENS FALLS, N. Y.

Try our Split Cams for your Flat Screens.

SIMPLICITY, in cylinder and vat construction, operation automatic, and without couch roll, doctor or any complicated moving parts.

DEPENDABILITY, in its simple revolving cylinder only, with nothing to get out of order, requiring little attention, and having a patented principle of maintaining wires always clean, insuring continuous performance.

PRODUCTIVENESS, enormous, through clean wires, large screening surface, patented unique method of discharge and freedom from shut-downs.

DURABILITY, by rigid construction, ample bearing surfaces, nothing to injure wires and highest grade materials.

All these enhance its value and involve upon you the duty of investigation.

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(Continued from page 56)

EXPORTS—PAPER.

PAPER AND MANUFACTURES OF.	May 1921		May 1922		Eleven Months Ended May 31, 1921		Eleven Months Ended May 31, 1922	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper, except printed matter (total).....		\$1,856,160		\$2,167,536		\$55,036,057		\$18,544,663
PRINTING PAPER—								
News Print	3,708,701	\$234,056	5,151,439	\$225,456	62,954,234	\$4,541,189	38,126,855	\$1,783,590
Exported to—								
Canada	79,972	\$7,554	332,057	\$19,487	1,279,243	\$106,204	1,108,689	\$75,855
Cuba	2,904,153	178,902	1,672,336	66,977	18,395,261	1,293,425	14,863,092	663,496
Argentina			1,265,840	50,589	23,210,439	1,373,513	9,243,742	363,826
Brazil	44,768	2,560	20,730	1,146	1,126,609	126,675	205,920	16,647
Uruguay			12,980	548	1,721,061	108,960	435,876	19,573
Other South America.....	63,624	4,885	397,397	17,508	4,369,116	402,644	2,359,189	120,643
China	29,362	1,770			1,711,545	173,224	1,261,256	51,605
Philippine Islands	288,575	18,005	296,882	13,431	3,630,265	254,421	3,041,464	152,294
Australia					891,602	91,449		
Other countries	297,947	20,380	1,153,217	55,770	6,619,093	608,674	5,607,717	320,651
Bible or India paper.....			2,186	\$288			110,691	\$82,163
Other book paper, not coated.....	2,078,064	\$279,850	2,631,050	\$244,742	76,468,845	\$12,382,220	19,170,432	\$3,066,538
Exported to—								
Greece					756,384	\$98,100		
United Kingdom	22,578	\$3,125	70,281	\$15,881	1,096,310	243,928	377,932	\$76,509
Canada	350,113	48,596	205,460	19,907	4,641,691	645,479	2,464,743	284,720
Mexico	297,914	46,438	244,103	22,465	2,280,322	149,404	2,631,248	294,917
Cuba	351,629	56,507	376,481	32,346	11,241,173	1,968,430	2,934,449	293,241
Argentina	105,080	14,662	72,869	7,088	12,266,565	1,719,552	371,720	46,815
Brazil	64,094	8,019	221,496	20,882	4,915,295	904,189	733,742	96,301
Chile	13,775	2,274	14,326	1,614	988,516	181,606	95,784	11,957
Colombia	1,588	313	127,366	12,293	1,348,219	233,170	480,988	46,961
Peru	14,367	2,741			1,171,709	205,396	306,608	30,237
Uruguay	35,707	4,557	18,821	1,871	2,003,039	279,051	21,653	2,133
Venezuela	22,446	2,125	22,572	2,601	1,255,702	227,977	587,756	71,115
British India	275	34	39,569	3,715	2,939,347	469,048	462,429	45,854
China	60,068	5,012	181,354	15,616	6,340,019	1,062,760	1,562,606	154,525
Dutch East Indies.....	6,192	879			1,213,564	197,485	9,186	1,139
Japan	286,925	32,039	284,410	17,726	1,806,682	238,911	2,502,799	208,498
Philippine Islands	122,067	15,388	280,688	22,422	4,676,318	778,652	1,393,817	151,291
Australia	203,411	18,003	108,763	10,258	8,144,640	1,146,213	657,697	64,362
Other countries	119,835	19,138	164,491	18,057	7,383,330	1,362,878	1,575,295	185,963
Cover paper			106,914	\$16,676			1509,380	\$177,949
Grease-proof and waterproof paper.....		\$7,944	140,387	15,453		\$339,547		89,310
Wrapping paper	1,844,720	137,617			40,649,354	5,635,348	*11,682,845	*777,175
Kraft wrapping			71,491	5,615			1387,471	130,993
Other wrapping			2,918,922	183,315			*14,808,248	*1894,104
Writing paper and envelopes.....		243,618				8,055,226		*1,033,894
Writing paper, except in papereries.....			589,397	92,795			*2,917,794	*491,036
Surface-coated paper			318,415	50,004			*1,319,224	*1245,587
Tissue and toilet paper.....		85,682				1,651,439		*1,398,118
Tissue and crepe paper.....			210,748	50,884			1945,623	*230,359
Toilet paper			748,400	66,456			12,160,494	*216,920
Paper towels and napkins.....		11,849	65,636	9,582		348,735		130,964
Bristols and Bristol board.....			147,370	22,509			1654,918	*186,819
Paper board and straw board.....		139,328	4,324,561	208,879		4,723,151		1,478,270
Sheathing and building paper.....			651,708	27,017			*2,181,727	*186,651
Wall board of paper or pulp.....		46,707	522,511	24,707		1,310,599		343,279
Cigarette paper and books.....			32,725	13,550			*278,711	*113,430
Photographic paper			138,170	141,993			1664,119	1638,559
Paper hangings (wall paper).....		37,003	1,314,131	10,234		1,039,093		383,535
Paper bags		42,258	818,862	80,283		1,891,681		798,851
Boxes and cartons.....		79,076	884,372	64,076		1,877,646		885,090
Carbon paper		38,884	66,366	48,897		786,231		484,010
Envelopes			250,871	49,314			*1,081,965	*203,650
Indurated fiber ware.....			39,186	3,855			*116,685	*12,307
Playing cards		34,009	353,948	48,124		1,000,675		380,513
Cash-register and adding-machine paper.....		4,792	48,266	5,721		239,159		95,840
Papereries (writing paper in boxes).....			23,375	8,155			*184,951	*132,311
Other paper and paper products, n.e.s.....		433,487	2,975,904	429,454		9,814,106		4,102,848
Books, maps, pictures, and other printed matter.....		\$1,590,219				\$23,095,521		*\$9,481,915
Books and Pamphlets.....			1,886,338	\$665,648			*18,162,974	*12,979,393
Maps and charts.....			10,331	15,216			*158,229	*176,997
Music in books or sheets.....			44,079	24,620			*1182,900	*132,341
Souvenir post cards.....			71,974	12,099			*1785,898	*1101,603
Lithographically printed matter, except post cards and maps.....			113,107	59,302			*659,810	*1334,055
Other printed matter.....			1,926,189	694,404			*18,045,811	*12,880,402

WOOD PULP AND PAPER STOCK.

Wood Pulp	2,341	\$162,414			25,255	\$2,618,688	*11,740	*\$614,098
Mechanical wood pulp.....							149	13,859
Sulphite wood pulp.....			1,542	\$67,130			18,340	1362,699
Soda wood pulp.....			466	\$1,907			11,694	1153,533
Kraft wood pulp.....								
Other wood pulp.....			130	9,923			11,203	160,407
Rags, and other paper stock.....	1,897,169	38,291	6,609,897	128,126	54,514,835	1,702,754	63,965,051	998,688

PAPER AND PULP MILL MACHINERY.

Paper and pulp-mill machinery.....		\$157,933				\$3,453,677		*\$1,376,074
Pulp-mill machinery			9,344	\$1,788			190,377	122,284
Paper-mill machinery			360,480	\$118,913			*2,939,226	*1958,912

*July 1 to Dec. 31, 1921. †Jan. 1 to May 31, 1922.

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Chicago Office
1148 Otis Bldg.

Howard Bond

Howard Ledger



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THE HOWARD PAPER COMPANY,

Urbana, Ohio

West Virginia Pulp and Paper Company

Manufacturers of

Supercalendered and Machine

Finished Book and Lithographic Papers

Offset, Envelope and Music
Paper, High Grade Coated
Book and Label Papers

also

Bleached Spruce Sulphite and Soda Pulp

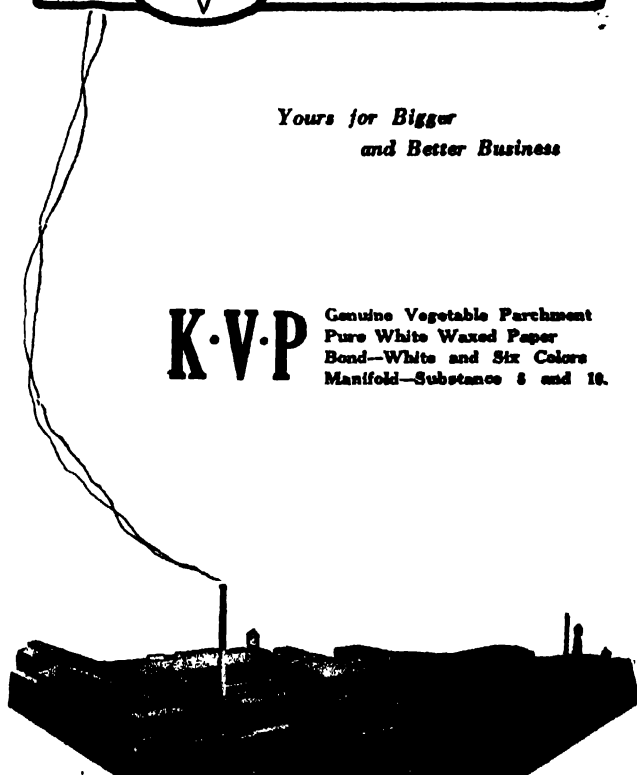
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Pure White Waxed Paper
Bond—White and Six Colors
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Quality Plus

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Berkshire
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OUR PAPERS ARE EXCELLENT FOR MEAT MARKETS, GROCERS AND GENERAL PACKING HOUSE REQUIREMENTS

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Trade Mark Department

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The following are trade-mark applications pertinent to paper and pulp field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister building, Washington, D. C., or Bush building, 130 West Forty-second street, New York, trade-mark specialists.

As an additional service feature to its readers, the PAPER TRADE JOURNAL gladly offers to them an advance search free of charge, on any mark they may contemplate printing or registering.

TIP TOP—No. 163,470. A. W. Pohlman Paper Company, Inc., New York. For bond paper for writing and printing purposes.

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APPROVAL—No. 163,264. Fox River Paper Company, Appleton, Wis. For writing paper

SINCERITY—No. 163,263. Fox River Paper Company, Appleton, Wis. For writing paper

ANNUAL REPORT OF PAPER DIVISION

(Continued from page 36)

Manufacturers in the field of exporting was outlined by the division and presented to certain manufacturers and exporters for suggestions. At the end of the fiscal year it was still undecided as to whether this canvass would be made. From the point of view of knowing how best to serve the industry it would seem a desirable project, but the interest of the paper industry in general in exporting has not yet been sufficiently established to determine whether it would be worth while to canvass each manufacturer on this subject.

A general questionnaire on the markets for paper and paper products in all foreign countries was prepared. At the end of the fiscal year it was awaiting only further suggestions from the trade in order to be placed in final form for sending to consuls and bureau representatives in all parts of the world.

A large part of the division's time is consumed in replying to inquiries of all sorts relative to foreign trade and to the paper industry in foreign countries.

The division is always ready to render miscellaneous services of any sort regarding foreign trade to paper manufacturers and exporters. An instance of this sort is the negotiations of the division to receive 500 gallons of rubber latex (the milk of the rubber tree) from the East Indian plantations, through the good offices of Commercial Attaché Walter S. Tower, at London, in order that paper manufacturers may experiment with a newly invented process for the use of rubber latex in making paper. By cable communication with Mr. Tower, the division made arrangements for the sending of this shipment and by correspondence with the interested concerns in the United States it arranged to divide the shipment according to the demands. American paper manufacturers desired immediate shipment of an amount considerably in excess of the gallon lot at that time available in London for sending to the United States. It is to be hoped that the experiments will demonstrate the possibility for the commercial use of rubber latex in large quantities in making paper. Laboratory experiments already have established the fact that certain characteristics of paper are improved by the introduction of latex.

J. F. Phillippi Co. To Deal in Pulpwood

BANGOR, Me., July 18, 1922.—The J. F. Phillippi Company has been organized in Bangor to carry on a general lumbering business and will probably deal in pulpwood and timberlands, the president, J. Frederick Phillippi of Bangor, having formerly held a prominent position in the spruce wood department of the Great

Northern Paper Company, and later with the E. B. Draper Company, large Bangor pulpwood operator. The E. B. Draper Company, which attained to large proportions during the war and later, curtailed operations considerably last year, releasing scores of office and woods employees. The capital stock of the new corporation is authorized at \$100,000, with par value of \$100. Directors are Irving Spason, vice-president of the First National Bank, Eugene T. Savage of the T. R. Savage Company, Gorham H. Wood, president of the Eastern Trust and Banking Company, and John H. Hickey of Old Town. The new corporation is said to have excellent financial backing.

No Low Water at Holyoke

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 24, 1922.—Paper manufacturing plants in this city are not troubled this summer by low water. Saturday there were three feet of water in the Holyoke dam. The river has given the mills about six weeks more full water than a year ago, this also making a considerable saving in coal. Usually at this time of the year the water in the Connecticut River is low but not so this year, at any rate up to the present time.

To Show Canadian Paper in New York

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 17, 1922.—The Canadian Department of the Interior is planning a forestry exhibit at the Eighth National Exhibition of Chemical Industries to be held in the Grand Central Palace, New York, during the week of September 11-16. The exhibition will include products from pulp and paper and wood distillation plants, and will demonstrate the possibilities of Canada's undeveloped water power and forests for American capital.



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Hayton Centrifugal pumps are designed for each kind of service. They are built for hard, continuous operation and will stand up under hard usage.

They are made to fit the working conditions and guaranteed to get the highest efficiency.

We also build the full line of Sandusky Triplex pumps.

Let us have your specifications for quotations.

HAYTON PUMP & BLOWER CO.

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Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

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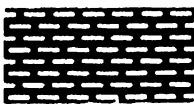
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STEEL, COPPER, BRASS, BRONZE
and other Alloys

punched for Centrifugal and
Rotary Screens, Pulp Washers,
Drainer Bottoms, Filter Plates, etc.



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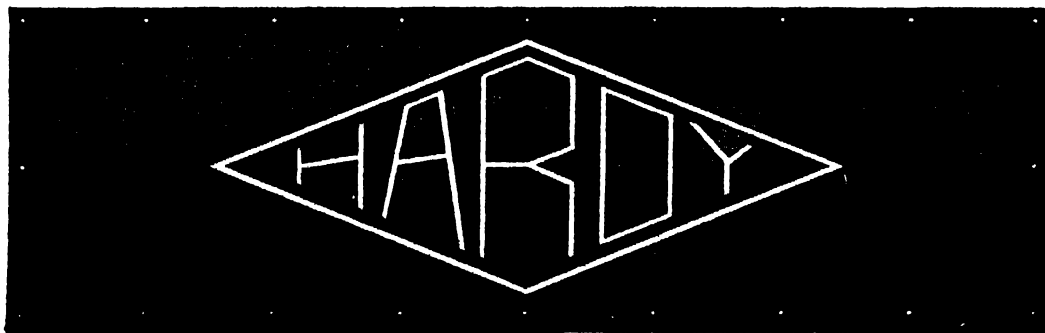
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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, July 26, 1922.

In spite of both the coal and rail strikes and other difficulties accompanying the summer months, it appears that these factors combined have not to any great extent harrassed the New York paper market. For summer business, the present volume in all phases of the industry may truly be regarded as remarkable. Only in a few instances have mills been forced to slacken up their production, and in many instances they have had all they could do to meet the urgent demands of consumers. On the face of things the rail situation will solve itself before a dangerous crisis has been reached. Manufacturers, however, are not inclined to place too much faith in the assumption that an amicable transportation settlement will be effected shortly, and, on the whole, are taking the precaution of laying in adequate supplies of merchandise to tide them over the coming two to three months.

As far as coal is concerned, it is estimated that while approximately half of the nation's reserve supply of the commodity has been consumed since July 1, there is still enough left, about 31,000,000 tons, to last nearly two months more, figuring the nation's coal consumption at the maximum of 4,000,000 tons a week. In order to avert a coal panic, however, some tangible arrangements will have to be negotiated before August 15, about which time the shortage will be so widespread as to be generally felt. Smaller bogus and tissue mills are having their difficulties already, and even the larger paper manufacturers the country over are not inclined to view the situation too lightly.

News print continues to cut a mark of its own in the industry, and it would seem that the phenomenal demand and equally phenomenal production in this market have no intention of even "coming up for air" at least for the balance of the present year. The increase in prices several weeks ago, rather than retarding the sale of the commodity, has apparently stimulated buyers into contracting for future shipment before any more advances are registered. Mills are running to capacity and there seems to be no let-down in publishers' demands. Newspapers are running quantities of advertising, many special editions and exceptionally large papers as a general rule. This combined with the fact that numbers of the small-town papers have recently got back in the running may account largely for the growing demand.

Dealers in book paper are now basing their hopes on the large volume of fall business they feel certain will come. There have been no price alterations to speak of throughout the late spring and summer and it is because of the fact that consumers' stocks have run to an exceedingly low ebb during this period that good times are anticipated when the stocking up does come. Hand-to-mouth buying has characterized the business of recent weeks and the demand has been sluggish.

While Latin-America has almost fallen out of the limelight as an export objective for fine paper manufacturers, the domestic market, on the other hand, has firmed slightly. Volume of transactions is light, but a fairly steady amount of fine paper finds its way into consuming channels each week to meet the current demands. Dealers and merchants have not exhibited any tendency to stock up heavily for fall business as yet, but this is confidently expected as soon as the slight depression of summer is over.

As far as demand is concerned, tissue manufacturers do not even know that summer is at hand. For the past three weeks they have enjoyed a volume of business that is really remarkable. As compared with some of the spring months, when each week was about as dull as the one preceding it, the present situation—with mills in some cases turning down orders—is a genuine boom. Prices are firm and while but few advances have been made, a general stiffening on all grades of tissue is predicted for the near future.

Kraft mills also are turning out a goodly amount of wrapping paper in response to a steady, regular demand. Business rather resembles that of fall or early winter than that of summer in point of volume. Bogus prices are considerably higher and this may be directly traced to the materially increased cost of coal to these mills.

For two weeks the board market has undergone the most satisfying period of strengthening and improvement it has known in many months. Some of the mills are sold up for the next six weeks and more and patent coated board moved up to \$70, New York. The increased prices of paper stock have played their part in the price stiffening in this market, and the board situation at present is considered to be in a strong position even though orders are not being received in great volume.

Mechanical Pulp

Groundwood mills are still doing a fair amount of business and when it is considered that at this time of the year most of the grinders are really forced to slacken up due to low water, it is gratifying to learn that production of any sort is being carried on. The immense volume of news print production has contributed to the stability of the market for mechanical pulp, and due to the fact that available supplies are fast diminishing, dealers look for a rise in prices to come soon.

Chemical Pulp

Kraft pulp prices are, on the whole, remaining firm, although there have been some slight price lowerings on imported grades. Chemical pulp generally is decidedly firm in tone and although not much buying is being done for future delivery, the current demand supports a fairly active market. Dealers believe that prices will advance with the waning of summer.

Old Rope and Bagging

Rope has been moving into consuming channels in regular amounts, a fair amount of activity on all grades being noted as well as an unusually strong demand for mixed strings and manila rope. Collections of old rope have been very ragged for many months and packers are experiencing difficulty in securing adequate shipping facilities. Prices continue to stiffen all along the line and the market is firm.

Waste Paper

Lower grades of waste paper are now in excellent demand and consumption by paper mills of the better grades continues to be heavy where these grades can be obtained. Prices are about as high as they may safely go with soda pulp at its present price. Paper box board mills are regulating their prices in proportion to the continually advancing cost of paper stock, many of the lower grades of waste paper being utilized in this industry.

Rags

Roofing is sky-high and practically unavailable in quantity shipment. There is a steady demand for both new and old grades of whites and bleachable rags as well as thirds and blues, but it is nearly impossible to find anyone with quantities of these grades to sell, according to several dealers in this city. The general tone of the rag market is one of prosperity. Prices have an upward trend and it is believed that the next sixty days will bring them much higher.

Twine

A very gradual improvement is constantly taking place in the twine market, according to several leading merchants of this city. Prices are not expected to go any lower and dealers state that when consumers realize this, a resumption of normal buying will come about and the market will soon get on its feet. At present the demand is quite slack, but as raw materials become more and more scarce, the time rapidly approaches when a decided advance may be anticipated.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations July 25, 1922:

STOCKS	BID.	ASKED.
American Writing Paper Company, pref.	29	30
International Paper Company, com.	52 7/8	53 1/4
International Paper Company, pref., stamped.	70	53 1/2
Union Bag & Paper Corporation	59 1/2	60

Paper

F. o. b. Mill.

Ledgers	10.50	@ 30.00
Bonds	8.50	@ 55.00
Writings—		
Extra Superfine	14	@ 25
Superfine	13	@ 20
Tub Sized	10	@ 16
Engine Sized	9.00	@ 15.00
News—f. o. b. Mill—		
Rolls, contract	3.50	@ 3.75
Rolls, transit	3.75	@ 4.00
Sheets	4.00	@
Side Runs	3.25	@ 3.50
Book, Casel—f. o. b. Mill		
S. & S. C.	7.50	@ 9.00
M. F.	6.00	@ 7.50
Coated and Enamel	8.75	@ 15.00
Lithograph	9.00	@ 11.00

Tissues—f. o. b. Mill		
White, No. 1	.75	@ .80
Colored	1.00	@ 2.00
Anti-Tarnish	.75	@ .80
Silver Tissue	1.50	@ 2.70
Manila	.75	@ .80

Kraft—f. o. b. Mill—		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	5.75	@ 6.25
Imported	6.00	@ 6.25
Screenings	2.50	@ 3.50

Manila—		
No. 1 Jute	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.50	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75

Fiber Papers—		
No. 1 Fiber	6.00	@ 6.25
No. 2 Fiber	5.00	@ 5.25
Common Bogus	1.75	@ 2.25
Card Middles	4.00	@ 5.00

Boards—per ton—		
News	40.00	@ 45.00
Straw	40.00	@ 45.00
Chip	37.50	@ 42.50
Binders Board	60.00	@ 70.00
Spl. Mla. L. Chip	52.50	@ 62.50
Wood Pulp	75.00	@ 90.00
Container	60.00	@ 70.00

Wax Paper—		
Self Sealing White		
28 and 30 lb.		
basis	10.00	@ 11.00
Waxed Tissue	1.40	@ 1.60

Glassine—		
Bleached, basis 25		
lbs.	12.75	@ 13.25
Bleached, basis 20		
lbs.	13.75	@ 15.25

Mechanical Pulp

(Ex-Dock.)

No. 1 Imported	32.00	@ 38.00
(F. o. b. Pulp Mills.)		
No. 1 Domestic	28.00	@ 34.00

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.30	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
No. 2 Strong unbleached	2.25	@ 2.50
No. 1 Kraft	2.50	@ 3.00
Sulphate—		
Bleached	3.90	@ 4.00
(F. o. b. Pulp Mill.)		
Sulphite (Domestic)—		
Bleached	4.00	@ 4.50
Strong unbleached	2.60	@ 2.80
Easy Bleaching		
Sulphite	2.60	@ 3.10
News Sulphite	2.50	@ 2.80
Mitscherlich	2.80	@ 3.10
Kraft (Domestic)	2.50	@ 3.00
Soda Bleached	3.50	@ 3.75

Domestic Rags

New Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	10.30	@ 11.00
New White, No. 2	6.50	@ 7.00
Silesias, No. 1	6.00	@ 6.50
New Unbleached	8.50	@ 9.00
Washables	4.00	@ 4.25
Fancy	5.00	@ 5.50
Cotton—according to Grades—		
Blue Overall	5.50	@ 6.00
New Blue	4.25	@ 4.75
New Black Soft	3.00	@ 3.25
New Light Seconds	2.75	@ 3.00
O. D. Khaki Cuttings	3.25	@ 3.60
Men's Corduroy	2.50	@ 2.75
New Canvas	6.50	@ 7.00
New Black Mixed	2.25	@ 2.75

White, No. 1—		
Repacked	5.60	@ 6.10
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	2.75	@ 3.00
Miscellaneous	2.10	@ 2.35
St. Soiled White	1.15	@ 1.25

Thirds and Blues—		
Repacked	1.60	@ 1.75
Miscellaneous	1.15	@ 1.25
Black stockings	2.25	@ 2.50
Rooting Rags—		
Cloth Strippings	1.15	@ 1.20
No. 1	1.15	@ 1.20
No. 2	1.10	@ 1.15
No. 3	.75	@ .80
No. 4	.75	@ .80
No. 5A	.90	nominal

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbleached Cottons	7.50	nominal
New White Cuttings	9.60	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings	2.00	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	9.00	@ 11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cottons	1.50	nominal
Ger. Blue Linens	3.50	nominal
Cheeks and Blues	1.50	nominal
Dark Cottons	1.10	@ 1.15
Shoppers	1.00	@ 1.05
French Blues	2.00	nominal

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	.80	@ .85
Domestic	.80	@ .85
Wool, Tares, light	1.00	@ 1.10
Wool, Tares, heavy	1.10	@ 1.15
Bright Bagging	.90	@ 1.00
No. 1 Scrap	.80	@ .90
Sound Bagging	.75	@ .85
Manila Rope—		
Foreign	5.00	@ 5.25
Domestic	5.25	@ 5.50
New Bu. Cut	1.80	@ 1.90
Hessian Tute Threads—		
Foreign	2.00	@ 2.40
Domestic	2.00	@ 2.25
Mixed Strings	.75	@ .85

Twines

Cotton—(F. o. b. Mill)		
No. 1	.33	@ .35
No. 2	.31	@ .33
No. 3	.27	@ .29

India, No. 6 basis—		
Light	.18	@ .19
Dark	.18	@ .19
B. C., 18 Basis	.39	@ .41
A. B., Italian, 18 Basis	.51	@ .61
Finished Jute—		
Light, 18 basis	.26	@ .27
Dark, 18 basis	.27	@ .29
Jute Wrapping, 3-6 Ply—		
No. 1	.23	@ .24
No. 2	.31	@ .32
Tube Rope—		
4-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India—		
Basis	.16	@ .17
Paper Makers Twine		
Halls	.13	@ .15
Box Twine, 2-3 ply	.17	@ .18
Jute Rope	.13	@ .15
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.90	@ 4.15
Hard, White, No. 2	3.50	@ 3.70
Soft, White, No. 1	3.50	@ 3.65
Flat Stock—		
Stitchless	1.85	@ 1.95
Over Issue Mag.	1.85	@ 1.95
Solid Flat Book	1.75	@ 1.85
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	2.25	@ 2.50
Ledger Stock	1.90	@ 2.00
No. 1 White News	1.70	@ 1.80
New B. B. Chips	.65	@ .70
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cut No. 1	1.75	@ 1.90
Extra No. 1, Old	1.40	@ 1.60
Print	.90	@ 1.00
Container Board	.65	@ .75
Bogus Wrapper	.60	@ .70
Old Krafts, machine compressed		
Bales	1.80	@ 1.90
News—		
Strictly Overissue	.75	@ .80
Strictly Folded	.67 1/2	@ .72 1/2
No. 1 Mixed Paper	.57 1/2	@ .62 1/2
Common Paper	.35	@ .40

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill

All Rag Bond	35	@ 40
No. 1 Rag Bond	30	@ 35
No. 2 Rag Bond	18	@ 20
Water Marked Sulphite	10	@ 14
Sulphite Bond	9	@ 12
Sulphite Ledger	12	@ 13
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 22
No. 2 Fine Writing	12	@ 20
No. 3 Fine Writing	8	@ 12
No. 1 M. F. Book	6 1/2	@ 7
No. 1 S. & S. C. Book	6 1/2	@ 7 1/2
Coated Book	8 1/2	@ 10 1/2
Coated Label	8 1/2	@ 10 1/2
News—Rolls, mill	3 1/2	@ 4 1/2
News—Sheets, mill	3 1/2	@ 4 1/2
No. 1 Manila	5	@ 5 1/2
No. 1 Fiber	4 1/2	@ 5
No. 2 Manila	4	@ 4 1/2
Butchers' Manila	4	@
No. 1 Kraft	6 1/2	@ 7
No. 2 Kraft	5 1/2	@ 6
Wood Tag Boards	4	@
Screenings	2 1/2	@
Boards, per ton—		
Main Chip	35.00	@ 40.00
Solid News	40.00	@ 45.00
Manila Lined		
Chip	45.00	@ 52.50
Container Line—		
85 Test	55.00	@ 60.00
100 Test	60.00	@ 65.00

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Bonds	10	@ .60
Ledgers	15	@ .40
Writings—		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F.	.06	@ .09
Book, S. S. & C.	.08	@ .15
Book, Coated	.08	@ .15
Coated Lithograph	.10	@ .15
Label	.08	@ .15
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul.	.08	@ .08 1/2
Manila No. 2	.07 1/2	@ .08
No. 2 Kraft	—	@ .08 1/2
No. 1 Kraft	—	@ .09 1/2
Common Bogus	.02 1/2	@ .03
Straw Board	35.00	@ 45.00
News Board	32.50	@ 35.00
Chip Board	27.50	@ 32.00
Wood Pulp Board	90.00	@ 100.00
(Carload Lots)		
Binder Boards—		
Per ton	\$65.00	@ 75.00
Carload lots	60.00	@ 65.00
Tarred Felts—		
Regular	48.00	@ 50.00
Slaters	54.00	@ 56.00

Best Tarred, 1-ply (per roll)	1.35	@ 1.50
Best Tarred, 2-ply (per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.

Gunny No. 1—		
Foreign	.75	@
Domestic	.70	@
Manila Rope	4.00	@ 4.50
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Burlap	.75	@ .80
New Burlap Cuttings	1.75	@ 2.10

Old Papers

F. o. b. Phila.

Shavings—		
No. 1, Hard	4.00	@ 4.25
No. 2, Hard	3.50	@ 3.75
No. 1 Soft White	3.35	@ 3.50
No. 2 Soft White	2.00	@ 2.25
No. 1 Mixed	1.50	@ 1.75
No. 2 Mixed	1.00	@ 1.25

(Continued on page 66)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 22, 1922

SUMMARY

Wrapping Paper.....475 rolls, 203 bls.
 Packing Paper.....596 rolls
 Filter Paper.....40 ca.
 Tissue Paper.....9 ca.
 Printing Paper.....7 ca., 38 bls.
 Wall Paper.....6 ca.
 Paper Hangings.....10 bls.
 Photo Paper.....2 ca.
 Cigarette Paper.....110 ca.
 Tracing Paper.....14 ca.
 Miscellaneous Paper.....6,439 rolls, 384 bls.

CIGARETTE PAPER.

British American Tobacco Co., Adriatic, Liverpool, 14 ca.
 British American Tobacco Co., Celtic, Liverpool, 34 ca.
 Ross & Frank, Sarcoux, Havre, 14 ca.
 De Manduit Paper Corp., by same, 48 ca.

PHOTO PAPER

J. J. Ganin, Adriatic, Liverpool, 1 ca.
 J. J. Ganin, Celtic, Liverpool, 1 ca.

PAPER HANGINGS

W. H. S. Lloyd & Co., Celtic, Liverpool, 5 bls.
 W. H. S. Lloyd & Co., Menominee, London, 5 bls.

WALL PAPER

R. F. Downing & Co., Menominee, London, 6 ca.

PRINTING PAPER

B. F. Drakenfeld & Co., Celtic, Liverpool, 7 ca.
 M. O'Meara Co., Caronia, Hamburg, 38 bls.

TISSUE PAPER.

C. H. Wynman Co., Adriatic, Liverpool, 7 ca.
 F. C. Strype, by same, 2 ca.

FILTER PAPER

E. Fougere & Co., Homeric, Paris, 37 ca.
 Eimer & Amend, Ryndam, Rotterdam, 2 ca.

PACKING PAPER.

Republic Bag & Paper Co., Ryndam, Rotterdam, 596 rolls.

WRAPPING PAPER

O. W. Miller & Co., Stockholm, Gothenburg, 17 rolls.
 Corn Exchange Bank, by same, 28 rolls.
 M. O'Meara Co., by same, 98 bls.
 L. Glickman & Co., by same, 30 bls, 965 rolls.
 L. Nyman & Sons, by same, 67 bls, 334 rolls.
 Seggerman Bros., by same, 8 bls.

TRACING PAPER.

E. Dietzgen & Co., Mongolia, Hamburg, 14 ca.

PAPER.

M. O'Meara Co., Stockholm, Gothenburg, 74 rolls.
 Coy. Diabrow & Co., Inc., by same, 10 bls.
 Republic Bag & Paper Co., by same, 2,743 rolls.
 Arkell Safety Bag Co., by same, 22 rolls.
 Arkell Safety Bag Co., by same, 18 rolls.
 Wilkinson Bros. & Co., Inc., by same, 2,734 rolls.
 C. K. MacAlpin, by same, 766 rolls, 336 bls.
 J. P. Hefferman Paper Co., by same, 100 rolls.
 M. M. Cohen, by same, 38 bls.

RAGS, BAGGINGS, ETC.

G. M. Graves Co., Inc., Columbia, Glasgow, 126 bls. paper stock.
 Irving Nat'l Bank, by same, 87 bls. rags.
 Brown Bros. & Co., by same, 64 bls. paper stock.
 E. J. Keller Co., Inc., Pr. Fillmore, Bremen, 840 bls. rags.
 E. J. Keller Co., Inc., Schoharie, Hamburg, 60 bls. wax waste.
 Katzenstein & Keene, by same, 25 bls. rags.
 Katzenstein & Keene, Port Alma, London, 196 bls. baggings.

Castle, Gottheil & Overton, Schoharie, Hamburg, 104 bls. rags.
 Castle, Gottheil & Overton, Chicago, Havre, 376 bls. rags.
 Waste Materials Trading Corp., Ryndam, Rotterdam, 430 bls. paper stock.
 Waste Materials Trading Corp., by same, 800 bls. shoppies.
 Waste Materials Trading Corp., by same, 372 bls. baggings.
 S. Silberman, by same, 193 bls. paper stock.
 American Wood Pulp Corp., by same, 603 bls. rags.
 Katzenstein & Keene, by same, 154 bls. rags.
 Katzenstein & Keene, by same, 158 bls. baggings.
 E. J. Keller Co., Inc., by same, 162 bls. paper stock.
 E. J. Keller Co., Inc., by same, 49 bls. rags.
 E. Butterworth & Co., Inc., Edgchill, Antwerp, 143 bls. bagging.
 M. O'Meara Co., by same, 158 bls. bagging.
 Irving Nat'l Bank, by same, 95 bls. bagging.
 Northern Metals Selling Co., by same, 142 bls. rags.
 Castle, Gottheil & Overton, by same, 856 bls. rags.
 Waste Materials Trading Corp., by same, 305 bls. rags.
 J. Perlman, Ulua, Havana, 2 bls. rags.
 M. Weller, by same, 10 bls. rags.
 M. O'Meara Co., Chickasaw, Hamburg, 71 bls. paper stock.
 F. P. Gaskell Co., by same, 67 bls. rags.
 Katzenstein & Keene, Inc., by same, 419 bls. rags.

OLD ROPE.

Katzenstein & Keene, Inc., City of St. Joseph, Barcelona, 180 bales.
 Bemis Bros. Bag Co., by same, 28 coils.
 Atlantic Nat'l Bank, Columbia, Glasgow, 60 coils.
 Brown Bros. & Co., Bristol City, Bristol, 58 coils.
 Brown Bros. & Co., Ryndam, Rotterdam, 68 coils.
 J. C. Stallie & Co., by same, 180 coils.
 N. E. Herzen, Cahile, Hull, 99 coils.
 Brown Bros. & Co., by same, 50 coils.
 J. Perlman, Ulua, Havana, 4 bales.

WOOD PULP.

A. J. Pagel & Co., Inc., Braheholm, Genle, 1,125 bales.
 Johansson, Wales & Sparre, Inc., Braheholm, Kiamfors, 5,400 bales.
 M. Gottesman & Co., Inc., Honolulu, Stockholm, 3,000 bales.
 M. Gottesman & Co., Inc., Schoharie, Hamburg, 701 bales.
 R. F. Hammond, Honolulu, Stockholm, 500 bales, 100 tons.
 Scandinavian American Trading Co., Stockholm, Gothenburg, 508 bales.
 Johansson, Wales & Sparre, Inc., by same, 758 bales.
 Seggerman Bros., by same, 500 bales.
 Niken, Lyon & Co., by same, 125 bales.
 Whalen Pulp & Paper Mills, Ltd., Stanley Dollar, Vancouver, B. C., 9,690 bales, 1,384 tons.
 Bulkeley, Dunton & Co., Bremerton, Genle, 750 bales, 152 tons.
 M. Gottesman & Co., Inc., by same, 1,524 bales, 304 tons.
 A. J. Pagel & Co., Inc., by same, 625 bales, 76 tons.
 Lagerloef Trading Co., Bremerton, Katka, 253 bls. wood pulp boards, 24 tons.
 Bulkeley, Dunton & Co., Santa Malta, 6,030 bls. wood pulp.
 Bulkeley, Dunton & Co., Bremerton, 750 bls. wood pulp.

WOOD FLOUR.

Hansa Co., Oropeza, Hamburg, 1,061 bags.

CASEIN.

Atterbury Bros., Jethon, Buenos Aires, 334 bags, 20,040 kilos.
 Kalbfleisch Corp., by same, 834 bags, 50,040 kilos.
 J. A. & N. Bird & Co., Southern Cross, Buenos Aires, 334 bags, 20,040 kilos.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 22, 1922

Hudson Trading Co., Braheholm, Genle, 104 bls. wrapping paper.

Hudson Trading Co., Braheholm, Gothenburg, 306 rolls paper.
 Paper Manufacturers Co., Inc., by same, 91 rolls and 10 bls. paper.
 Paper House of Penna., by same, 90 rolls and 41 bls. paper.
 Whiting, Patterson Co., Inc., by same, 550 rolls and 14 bls. paper.
 Foreign Paper Mills, Inc., by same, 12 bls. paper.
 Great Notch Paper Co., by same, 492 bls. paper.
 Valeby, Sacuyler Paper Co., by same, 46 bls. paper.
 Katzenstein & Keene, Inc., Chickasaw, Hamburg, 36 bls. rags.
 Irving Nat'l Bank, by same, 236 bls. rags.
 Katzenstein & Keene, Inc., Bacchus, Marselles, 913 bls. rags.
 Katzenstein & Keene, Inc., Sonora, Havre, 435 bls. rags.
 Katzenstein & Keene, Inc., Schoharie, Hamburg, 33 bls. rags.
 E. J. Keller Co., Inc., Themiste, Hamburg, 70 bls. old rags.
 E. J. Keller Co., Inc., by same, 41 bls. new rags.
 E. J. Keller Co., Inc., by same, 3 bls. jute cuttings.
 E. J. Keller Co., Inc., by same, 63 bls. red rags.
 E. J. Keller Co., Inc., Breiz Izel, Havre, 838 bls. rags.
 E. J. Keller Co., Inc., Breiz Izel, Rouen, 420 bls. rags.
 E. J. Keller Co., Inc., Schoharie, Hamburg, 218 bls. rags.
 E. J. Keller Co., Inc., Edgchill, Antwerp, 55 bls. cuttings.
 Castle, Gottheil & Overton, by same, 238 bls. rags.
 Baring Bros. & Co., by same, 476 bls. rags.
 Dill & Collins, Sinestern Miller, London, 206 bls. waste paper.
 Equitable Trust Co., by same, 207 bls. waste paper.
 Mechanics & Metals Nat'l Bank, by same, 277 bls. rags.
 G. M. Graves Co., Inc., by same, 179 bls. rags.
 A. J. Pagel & Co., Inc., Braheholm, Hosum, 3,000 bls. wood pulp.
 A. J. Pagel & Co., Inc., Braheholm, Domsjo, 6,600 bls. wood pulp.
 A. J. Pagel & Co., Inc., Braheholm, Genle, 2,500 bls. wood pulp.
 Johansson, Wales & Sparre, Inc., Braheholm, Kiamfors, 1,800 bls. wood pulp.
 Scandinavian American Trading Co., Braheholm, Iggeaund, 3,600 bls. wood pulp.
 Price & Pierce, Ltd., Braheholm, Gothenburg, 1,600 bls. wood pulp.

BUFFALO IMPORTS

WEEK ENDING JULY 22, 1922

Muder & Umlauf, Stockholm, Gothenburg, 521 rolls paper.
 Muder & Umlauf, by same, 43 bls. paper.

BOSTON IMPORTS

WEEK ENDING JULY 22, 1922

E. J. Keller Co., Inc., Georgian, Hamburg, 33 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING JULY 22, 1922

R. F. Hammond, Honolulu, Gothenburg, 1,250 bls. wood pulp, 250 tons.
 R. F. Hammond, Mexicano, Gothenburg, 1,750 bls. wood pulp, 350 tons.
 A. J. Pagel & Co., Inc., Bremerton, Genle, 1,250 bls. wood pulp, 254 tons.
 Guaranty Trust Co., Bremerton, Silke, 4,200 bls. wood pulp, 711 tons.
 Bulkeley, Dunton & Co., Swichco, 15,358 bls. wood pulp.

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Snow white of fine paper.
No wax to make drink taste.
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Nor to set aside on.
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One-at-a-time dustproof dispenser.
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Treble reinforced to make holders
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Lowest in cost.
Holds hot drinks.

You can sell such cups to particular people who stay sold and repeatedly come back for more—at a good profit to you.

F. N. BURT COMPANY, Ltd., Paper Cup Division, Buffalo, N. Y.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, July 25, 1922.

ALUM.—Summer appears to have calmed the tone of the alum market, and while the quoted prices hold steady at 3.50 cents a pound for lump, 3.65 for ground and 3.90 for powdered, transactions involve but small quantities.

BLEACHING POWDER—Bleach is still practically a minus quantity in so far as its influence on the chemical market is concerned due to the extreme scarcity of the commodity. A nominal price of 1.60 cents a pound is named by merchants but all existing stocks have been pretty thoroughly wiped out.

BLANC FIXE.—This product is moving regularly but slow as buyers are not exhibiting any too much interest in the market. Prices quoted are from \$37.50 to \$45 for blanc fixe pulp and 3.50 to 3.75 cents a pound for the dry.

CASEIN With the stimulated domestic production of casein, some of the strain, resulting from a topheavy demand and scant supplies, has been lightened. Argentine casein is in strong demand and manufacturers of fine coated papers are paying high prices for what little of the commodity is available. Dealers are quoting prices that range from 11.00 to 14.00 cents a pound.

CAUSTIC SODA—Location of the plant determines the variation of 3.10 and 3.25 cents a pound which is given on caustic. Demand is fair at the spot price of 2.50 cents a pound for 60 per cent.

CHINA CLAY—Larger importers of China clay state that the excellent demand for the commodity in this country has caused English producers to turn their dry stocks, great quantities of the wet stocks on the ground having been sold for future shipment. Imported is quoted at \$14 to \$22 per ton, domestic washed at \$7 to \$10 and unwashed at \$5.50 to 8.

LIQUID CHLORINE—The difficulty of storing chlorine in warm weather has held down tank car orders even at the low quotations of 4.25 to 4.50 cents a pound. There has been but slight activity in the sale of chlorine in cylinders of 100 pounds, quoted from 4.50 to 7.00 cents.

ROSIN. Slight competition together with a fairly steady demand has served to soberify rosin prices at the present figure of \$5.20 per barrel on grades E, F, and G, Savannah, Ga. New York prices average \$1 per barrel more than this.

SALTCAKE.—This commodity is about as scarce as bleaching powder at the present time, and due to slack acid production, will probably remain so until fall. Chrome cake is quoted at \$18 to \$19 a ton while acid cake ranges from \$20 to as high as \$24 and \$25, the last named price being exceptional, however.

SATIN WHITE. No movement of importance has been registered in the satin white market in recent weeks and quotations hold steady at 1.50 to 2.00 cents a pound.

SODA ASH.—Although further orders are coming in slowly, producers of soda ash report steady withdrawals on contract. Quoted prices on this basis are \$1.51 per cwt., works.

SULPHUR. Still moving regularly, sulphur continues to be quoted at \$18 to \$20 per ton.

STARCH. Starch is now quoted at the slightly stiffer price of 2.47 and 2.57 cents a pound for pearl and paper maker's grades respectively in bag quantities and 2.75 and 2.85 in barrels.

SULPHATE OF ALUMINA.—Demand is very good for aluminum sulphate plants are operating capacity to supply water filtration companies and paper manufacturers. Plain sulphate is quoted at 1.40 to 1.50 cents a pound with iron free at 2.15 to 2.35 cents.

TALCUM. Dealers in this commodity report a regular activity in the market, prices having a firm tone at the quoted \$15 to \$17 a ton.

Market Quotations

(Continued from page 63)

Solid Ledger Stock.	2.25	@	2.50
Writing Paper.....	1.80	@	2.00
No. 1 Books, heavy.	1.60	@	1.75
No. 2 Books, light.	1.40	@	1.50
No. 1 New Manila.	2.75	@	3.00
No. 1 Old Manila.	1.50	@	1.75
Container Manila.	1.00	@	1.10
Old Kraft.....	2.00	@	2.25
Overissue News....	.75	@	.80
Old Newspaper.....	.50	@	.60
No. 1 Mixed Paper.	.45	@	.50
Common Paper.....	.40	@	.50
Straw Board, Chip.	.40	@	.45
Binders' Bd. Chip.	.40	@	.45
Domestic Rags—New.			
Price to Mill, f. o. b. Phila.			
Shirt Cuttings—			
New White, No. 1	.10	@	.10½
New White, No. 2	.05½	@	.06½
Silesian, No. 1....	.05½	@	.06
New unbleached..	.09	@	.09½
Washables .....	.03½	@	.03½
Fancy .....	.04½	@	.04½
Cottons according to grades—			
Blue Overall .....	.04½	@	.05½
New Blue.....	.02	@	.02½

New Black Soft.	.03	@	.03½
New Light Sec.			
Khaki Cuttings....	.02	@	.02½
Corduroy .....	.02	@	.02½
New Canvas.....	.07	@	.07½
New Black Mixed	2.75	@	3.00
Old			
White, No. 1—			
Repacked .....	.06	@	.06½
Miscellaneous ...	.04½	@	.04½
White, No. 2—			
Repacked .....	.03	@	.03½
Miscellaneous ...	.02½	@	.02½
Thirds and Blues—			
Repacked	1.65	@	1.80
Miscellaneous ...	1.40	@	1.55
Black Stockings...	1.75	@	2.25
Roofing Stock—			
No. 1.....	1.00	@	1.10
No. 2.....	.90	@	1.00
No. 3.....	.80	@	.90
No. 4.....	.80	@	.90
No. 5A.....			nominal
B.....			nominal
C.....			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper			
Bonds .....	.06½	@	.60
Ledgers .....	.07½	@	.35
Writings .....	.07½	@	.22½
Superfine .....	.15	@	.22½
Fine .....	.15	@	.18
Books, S. & S. C.	.07	@	.10
Books, M. F.....	.05½	@	.07½
Books, coated .....	.08	@	.10
Label .....	.08½	@	.09½
News sheets	1.75	@	—
News, rolls	3.50	@	—
Manilas—			
No. 1 Manila	\$.675	@	—
No. 1 Fibre .....	.07½	@	—
No. 1 Jute	8.50	@	8.75
Kraft Wrapping .....	.06½	@	.07
Common Bogus	3.00	@	—

Boards

(Per Ton Destination)			
Chip	\$35.00	@	\$37.50
News, Vat Lined...	36.50	@	38.50

Wood, Vat Lined	.4725	@	—
Filled News Board	.3750	@	—
Solid News Board	.4200	@	45.00
S. Manila Chip	52.50	@	—
Pat. Coated	70.00	@	75.00

Old Papers

Shavings—			
No. 1 Hard White	3.70	@	3.90
No. 1 Soft White	3.30	@	3.45
No. 1 Mixed.....	1.50	@	1.75
Ledgers & Writings	.03½	@	—
Solid Books	1.85	@	2.10
Blanks	1.30	@	1.45
No. 2 Books Light	.60	@	.70
Folded News, over-			
issues	\$11.25	@	12.50
Gunny Bagging....	.70	@	.75
Manila Rope.....	4.25	@	4.50
Common Paper....	.50	@	.60
Old News .....	.55	@	—
Old Kraft.....	1.75	@	1.80

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper			
(Mill Prices to Jobbers f. o. b. Mill)			
Bond			
Sulphite .....	.11	@	.12½
Light tinted.....	.12	@	.13½
Dark tinted.....	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing .....	.10½	@	.13½
News, f. o. b. Mills—			
Rolls (carloads).	3.50	@	—
Sheets (carloads).	—	@	4.25
Sheets (2 tons or over)	—	@	4.50
Book—			
No. 1 M. F. (car-	9.50	@	—
loads)			
No. 2 M. F. (car-	8.50	@	—
loads)			
No. 3 M. F. (car-	8.00	@	—
loads)			
No. 1 S. C. (car-	10.00	@	—
loads)			
No. 2 S. C. (car-	9.00	@	—
loads)			
No. 1 Coated and	14.00	@	—
litho.			
No. 2 Coated and	13.00	@	—
litho.			
No. 3 Coated and	12.25	@	—
litho.			
Coated and litho,	14.25	@	—
colored			
Wrapping—			
Grey	4.50	@	—
White W-up	5.00	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.75	@	—
Fibre	6.75	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)			
Ground wood.....	\$27.50	@	\$35.00
Sulphite easy bleach-			
ing	60.00	@	65.00
Sulphite news grade	50.00	@	60.00

Sulphite, bleached	.9000	@	95.00
Sulphate	70.00	@	—

Old Waste Papers

(In carload lots, f. o. b. Toronto).

Shavings—			
White Env. Cut..	3.75	@	—
Soft White Book			
Shavings	3.40	@	3.45
White Blk News	1.70	@	—
Book and Ledger—			
Flat Magazine and			
Book Stock (old)	1.70	@	—
Light and Crum-			
pled Book Stock	1.55	@	—
Ledgers and Writ-			
ings	1.95	@	—
Solid Ledgers....	1.95	@	—
Manilas—			
New Manila Cut.	1.70	@	—
Printed Manilas..	.90	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News....	.80	@	—
No. 1 Mixed Pa-			
pers .....	.60	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto			
Per lb.			
No. 1 White shirt			
cuttings .....	.10½	@	.11
No. 2 White shirt			
cuttings .....	.05½	@	.05½
Fancy shirt cut-			
tings .....	.05	@	.05½
No. 1 Old whites	.04	@	—
Thirds and blues	.02	@	.02½
Per cwt.			
Black stockings..	2.00	@	2.25
Roofing stock:			
No. 1.....	1.35	@	—
No. 2.....	1.20	@	—
Roofing stock:			
Manila rope05½	@	.05½
No. 2.....	.01½	@	—
Gunny bagging....	1.00	@	1.25

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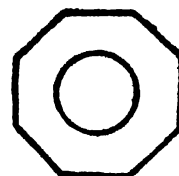
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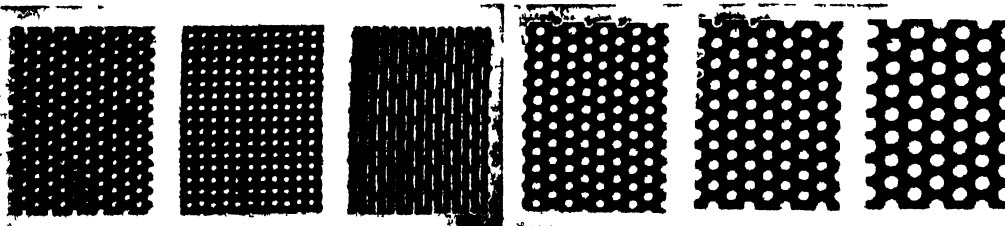
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HELP AND MISCELLANEOUS WANTS, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 35 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED—A calender man New York City position Address, Box 5277, care Paper Trade Journal Jy-27

WANTED—By Import and Domestic Paper Jobbers, located in Toronto, agencies for high grade paper products. Address, Box 5278, care Paper Trade Journal J-27

PRACTICAL and experienced paper board man. Must be experienced on all grades of board and general upkeep of entire plant. Knowledge of handling labor positively necessary. Best living conditions within short distance of plant. Address, Box 5279, care Paper Trade Journal J-27

BAG MACHINE ADJUSTER on flat and square, glassine specialties. Must be thoroughly familiar with machine printing. Excellent opportunity for an energetic, conscientious man with an eye to production. References required. Answer by letter to Box 5280, care Paper Trade Journal J-27

WANTED—A salesman who commands a good trade. We have stock in New York and really good mill connections in all kinds of white paper for big business. If you are such a man we will give you a good proposition. You must state full particulars. Address, Box 5281, care Paper Trade Journal J-27

WANTED—First class machine tender and back tender for 009 straw, 90" cylinder machine. Seventy and fifty-two and a half cents per hour respectively. Two tours. Fine modern mill. Good town. Address, Box 5283, care Paper Trade Journal J-27

WANTED—Night superintendent for waxed paper plant in the middle west. Must be experienced in bread wrapper work. Good permanent position. Address, Box 5284, care Paper Trade Journal A-17

WANTED—Capable and reliable millwright. Must be a hustler. Steady work. Mill located in New Jersey. Address, Box 5285, care Paper Trade Journal J-27

WANTED

MASTER Mechanic for two machine writing mill in good size middle west city. In application state age, experience and references. Address, Box 5282, care Paper Trade Journal. A-10

HELP WANTED

SUPERINTENDENT WANTED—For binder board mill located in Middle West. Must be fully experienced and able to show satisfactory daily productions and quality. Must have A-1 references which will be considered confidential. Write Box 5288, care Paper Trade Journal, and state what your experience has been. J-27

WANTED—Experienced Potdevin Automatic Bag Machine Adjusters, also old style square and flat, and experienced balers. All applicants must state previous experience and salary expected. Send all communications to Consolidated Paper Bag Company, 125 Merrimac Street, Boston, Mass. tf

WANTED—Experienced man with investment to connect himself permanently with paper stock company on Pacific Coast and take over management of Los Angeles plant. Write fully stating experience, salary expected, contemplated investment, etc. All correspondence confidential. Address, Box 5281, care Paper Trade Journal A-10

WANTED—District Salesmen on a commission basis to take on an important line in New England, New York, Pennsylvania and New Jersey, Michigan, Wisconsin and Minnesota and the far west. We can only consider those who already have an established trade and who cover their territory frequently. Address with full details, Box 5282, care Paper Trade Journal J-27

WANTED—Married man for plant Superintendent. One who is familiar with manufacturing pulp products, with certain knowledge of paper mill machinery and equipment, capable of handling men and women with mechanical ability, and production producer. State experience and salary. Address, Box 5283, care Paper Trade Journal A-8

SUPERINTENDENT WANTED by modern progressive mill located in Middle West. Must be fully up to date on cylinder tissue, have some knowledge of converting, be good at handling help. Man not over 35 years old preferred. Applicant must state age, past and present connections, salary now receiving if employed and other information considered of interest to a prospective employer. Address, Box 5192, care Paper Trade Journal tf

WANTED—A night foreman in two machine Kraft mill. Please state experience and wages desired. Address, Box 5242, care Paper Trade Journal J-27

WANTED to correspond with able paper distributors in Middle West to handle output of small plant making Filter Paper, Rope and Manilla. Special inducement offered. Address, Box 5245, care Paper Trade Journal J-27

WANTED—Man capable of supervising Fibre Container factory equipped with most modern machinery. Experienced man preferred. Address, Box 5246, care Paper Trade Journal tf

WANTED—Two good Backtenders by mill in the Middle West running on plain chip and specialties. Address, Box 5264, care Paper Trade Journal A-8

WANTED AT ONCE

for box board mill, two first class beatermen, two first class backtenders, give age, references, experience and where last employed in first letter. National Paper Products Co., Stockton, California. A-3

HELP WANTED

WANTED—Master Mechanic, capable of taking entire charge of repair crews in a large up-to-date box board mill in middle west. None but a hustler and live wire considered. References required. Address, Box 5285, care Paper Trade Journal. A-3

BEATER ENGINEER, one familiar with Chipboard, test liner and folding box board. Must be good on beater colors and be able to handle help in an efficient manner. Address, Box 5286, care Paper Trade Journal A-1

WANTED:

Master Tissue Paper Crepers who fully understand the art of creping lightweight tissues for napkins. A splendid and exceptional opportunity is offered to the right men. When replying please furnish full details of your past experiences, etc. Independent Paper Mills, Inc., 68 Thirty-fifth Street Brooklyn, New York. tf

SITUATIONS WANTED

YOUNG MAN age 30, seven years experience paper line, four selling. Well acquainted with New York Trade, also mills. Open for engagement with reliable fine paper jobber or mill agent. Either in selling or executive capacity. Address, Box 5286, care Paper Trade Journal A-10

MECHANICAL ENGINEER and master mechanic is open for employment. Has long experience in pulp and paper mills and has advised changes which have greatly improved the output with small costs. If your machines or any part of mill is not up to its production, let me give you my experience at small cost. Address, Box 5287, care Paper Trade Journal A-3

MILL MANAGER thoroughly experienced in the manufacture of ground wood, sulphite wrapping paper, rews and board. Cost accounting, purchasing and sales experience. Now employed, desires new connection. Good references. Address, Box 5289, care Paper Trade Journal A-3

SITUATION WANTED—Sheet calender man would like steady work running sheet calenders. Ten years' experience running light and heavy weight linen ledgers and bond papers. Address Box 5290, care Paper Trade Journal A-10

SALES MANAGER—Man 40, college education, thoroughly experienced as salesman wishes to make connection with firm desiring a sales or district manager. Have wide experience in selling beater room equipment and knives. Large following among paper mills in Eastern Penna. Address, Box 5270, care Paper Trade Journal. A-10

SULPHATE PULP SUPERINTENDENT, or Assistant, with proven ability, desires connection with mill having production trouble. Nine years' experience in the U. S. and Canadian mills. Best of references. Address, Box 5276, care Paper Trade Journal A-17

MILL CONNECTION WANTED for the Greater New York territory and vicinity, by selling organization in touch with the large buyers and users of paper. M. F. Super, Coated, Litho Coated, Bond Kraft or News Print, preferred. Have ample capital to finance large volume of business. Eastern Mill preferred. Address, Box 5265, care Paper Trade Journal. A-10

SITUATIONS WANTED

SITUATION WANTED by young, competent all around office man. Have had several years' of experience and worked up from the bottom and is now head of pulp and paper industry accounting staff. Thoroughly familiar with voucher system and Elliott Fisher bookkeeping records. Good reference. Write fully first letter. Address, Box 5272, care Paper Trade Journal. J-27

ASSISTANT MANAGER wants position. College graduate. Six years' experience in one of the largest pulp and paper mills on continent. Thoroughly familiar with office and shop practices and management. Recognized leader and organizer. Address, Box 5273, care Paper Trade Journal. J-27

\$6,000 OFFICE MANAGER, Sales, Credits, Purchases, Costs, etc., seeks new connection. Highest references given. Address, Box 5259, care Paper Trade Journal. A-3

MECHANICAL DRAFTSMAN, 16 years' technical and practical experience on construction and operation of Sulphite Ground Wood and Newspaper Mills. Open for position. Address, Box 5271, care Paper Trade Journal. J-27

SITUATION WANTED—A one hundred per cent American, between 35 and 40 years old, married, and at present employed. Have had nineteen years' experience in the Paper Industry, holding only executive positions. Thoroughly acquainted with the details of manufacturing, operating and financing a plant. Securing a salary is not the vital point, but locating with a concern where there is a future is the objective. Address, Box 5291, care Paper Trade Journal. A-3

PAPER LINE—Man available. Fifteen years' experience with large paper converter, desires position in sales end paper mill or jobbing line; would consider part interest in established jobbing house. Best references. Address, Box 5252, care Paper Trade Journal. A-3

EXPERIENCED SALESMAN—Fine papers, desires position to sell Chicago and Central West jobbers. Address, Box 5253, care Paper Trade Journal. A-3

WANTED—Superintendent of twenty years' experience as practical papermaker is open for position in news line. Address, Box 5248, care Paper Trade Journal. J-27

WRAPPING PAPER MANUFACTURERS

Manufacturers' agent, located in New Orleans, permanently established, well and favorably known to the larger jobbers in Louisiana and Texas, desires to represent, on a commission basis, manufacturers of Wrapping Papers, and both D. F. and W. F. Fibres. Address, Box 5292, care Paper Trade Journal. A-10

The Want Columns
of the
Paper Trade Journal
are
Result Getters
—
TRY THEM

SITUATIONS WANTED

MAN EXPERIENCED IN PAPER MILL ACCOUNTING, costs, office management and administrative problems, seeks position with progressive firm. Address, E. J. B., P. O. Box 760, Cincinnati, Ohio. A-3

A MAN thoroughly competent to run Calender and Press Roll Grinding Machine and able to determine Crowns desired. Wishes permanent or temporary work. Address, Box 5197, care Paper Trade Journal. Ag-3

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. Jy-27

KRAFT PULP MILLS—Tonnage is what you want. Get in touch with the man who can give it you at the right cost. Address, Box 5264, care Paper Trade Journal. J-27

FOR SALE

FOR SALE reasonable. Two Reeves variable speed transmission, size No. 3, range 2 to 1. Buffalo blower No. 4 and four calender rolls 50" x 41". All used only three months and in perfect condition. Address, Box 5293, care Paper Trade Journal. J-27

FOR SALE Double patent coated white cardboard Offcuts running from 5" to 9" in width of different lengths. Cheap High grade quality. Address, Mill Dept. Howe Lithographic Corporation, 55 33rd Street, Brooklyn, New York. A-17

WANTED—Four ft barker, either "Green Bay" or other equally good machine. Address, Box 52 5, care Paper Trade Journal.

FOR SALE—One No 10 Reeves Variable Speed Transmission. Brownville Board Co. Brownville, N. Y. A-10

FOR SALE—1 small Jordan Engine, 6 Farm Drives. Complete Triple-Deck frames for 44 dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

FOR SALE

- 2—Chilled Calender Rolls 12" diameter, 88" face.
- 1—3-drum Downingtown Reel.
- 2—Wilbraham-Green Vacuum Pumps
- 1—36" Diameter, 92" Face Cylinder Mold
- 1—Claffin Engine, with new filling.
- 1—200 H.P. General Electric Motor. (Used two months)
- 1—14x36 Cooper-Corlies Engine.
- 1—15¼x27 Buckeye Engine.

In order to move will quote very attractive price. Address, Box 177, Coshocton, Ohio. J-27

MISCELLANEOUS

WANTED—Six dryers, 36" diameter, 88 to 92" face. Also seven roll stack of calenders 90" face. California-Oregon Paper Mills, Los Angeles. A-3

W. H. VILLIERS, lately of Three Rivers may hear of something to his advantage by sending his address to Box 5294, care Paper Trade Journal. J-27

WANTED—Five second hand dryers, 72" by either 30, 36, or 48" in diameter, together with frames. Must be in good condition. Address, Box 5295, care Paper Trade Journal. A-3

SWIFT, GEORGE W., JR., Designer and Manufacturer of Special Machinery for Manufacturing and Printing Paper Goods. Bordentown, N. J. 8-24-23

MISCELLANEOUS

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PRESS PARTS FOR PAPER MACHINES—Pusey & Jones bell crank housings with rolls 18"x117", Black & Clawson swing arm housings with rolls.

DRYERS—Four 48"x111", thirteen 36"x95", four 48"x68", one 84"x67", eleven 42"x66".

CHILLED CALENDERS—One 72" five roll; one 66" five roll; one 54" five roll; two 58" six roll.

DILLON DOCTORS—For Machine Calenders 60" to 120" face.

SLITTERS AND WINDERS—One 120" Warren, one 108", 36" Kiddlers.

RELLS—Pusey & Jones two drum upright 48" to 114".

REFATERS—Five 72"x42" Noble & Wood; one Dilts 62"x50" iron tub; one Jones 62"x52"; seven Horne 36"x36"; three Downingtown iron tub 54"x42"; one Dillon 60"x48" wood tub; one Dilts 50"x42" wood tub; one Emerson 53"x52" wood tub. Two No. 2 Claffins, two No. 1 Claffins. Two Emerson 54"x60" wood tub.

JORDANS—One Wagg Majestic, two No. 2 Dillon Improved, one Large Horne, three Monarch, one Jones Standard, two Pope Brushing Engines.

SCREENS—One 12 plate, six 10 plate open side Packer, two 6 plate, one Moore & White auxiliary.

STUFF PUMPS—Deane triplex 9"x8", Gould triplex 8"x10", Sandusky triplex 4"x6", 2-6" post.

REVOLVING SHEET CUTTERS—Five 61" Hamblet, four 61" Finlay, one 50" Hamblet diagonal, one 42" Finlay.

REAM CUTTER—One 48" Acme.

SUPER CALENDERS—One 43", one 42", one 36" Holyoke.

WET MACHINES—Four 72" Bagley, 3 Sewall Hydraulic, 1-52".

ROTARY BOILERS—Two 8"x20". One Manistee Hog Chipper.

We have a large number of pumps and over five hundred calender, press and couch rolls in stock.

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Only 100 miles west of Chicago. Two Paper Machines 100,000 lbs. per day production of various grades of boards. Railroad sidings at the mill. 650 H. P. water power. Up to date and complete

The reason this Mill is offered for sale is because only part of present stockholders are consumers of board. They own majority of stock and are willing that either mill be sold outright or to retain their holdings and arrange for sale of 50% interest, preferably to some other consumer of board

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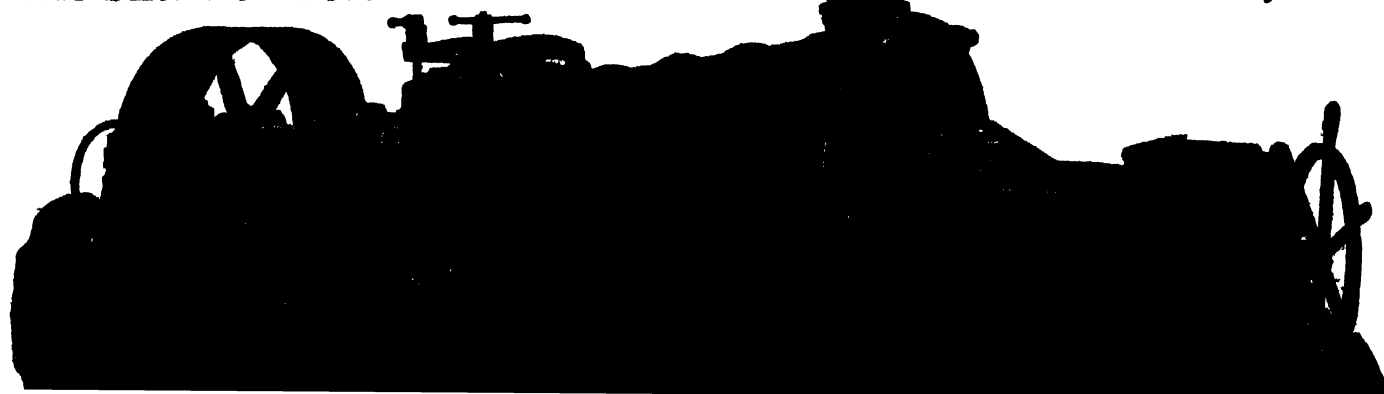
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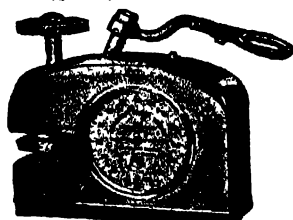


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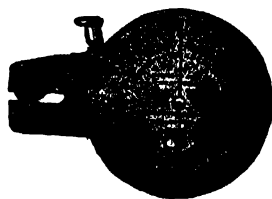
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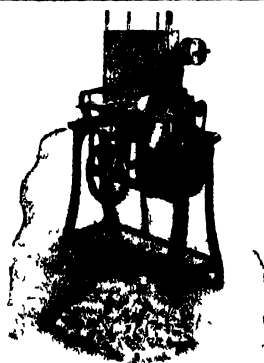
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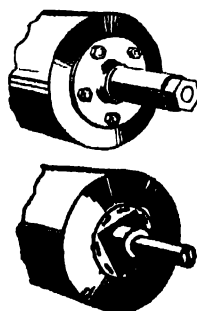
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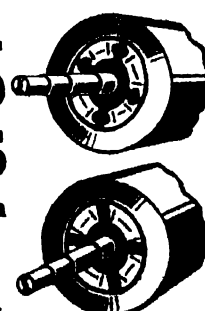
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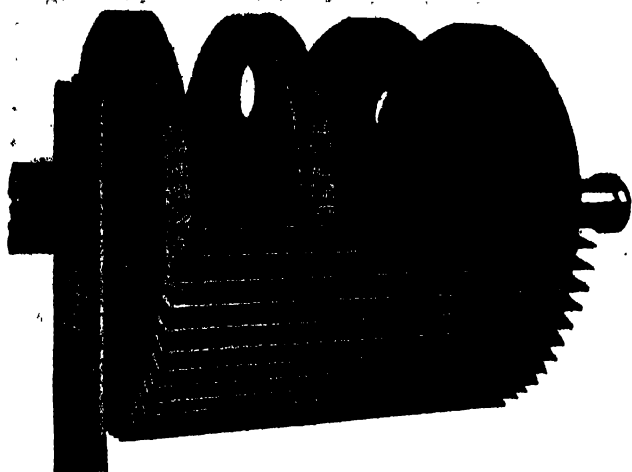
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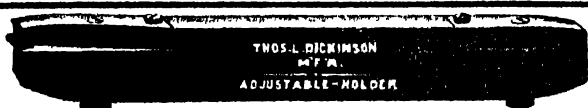
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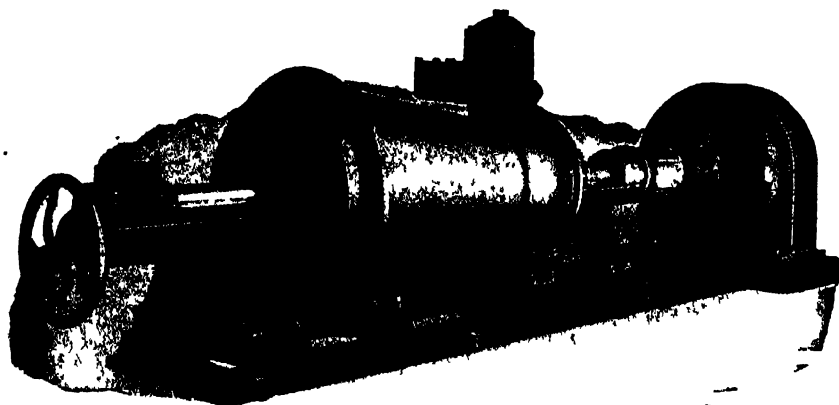
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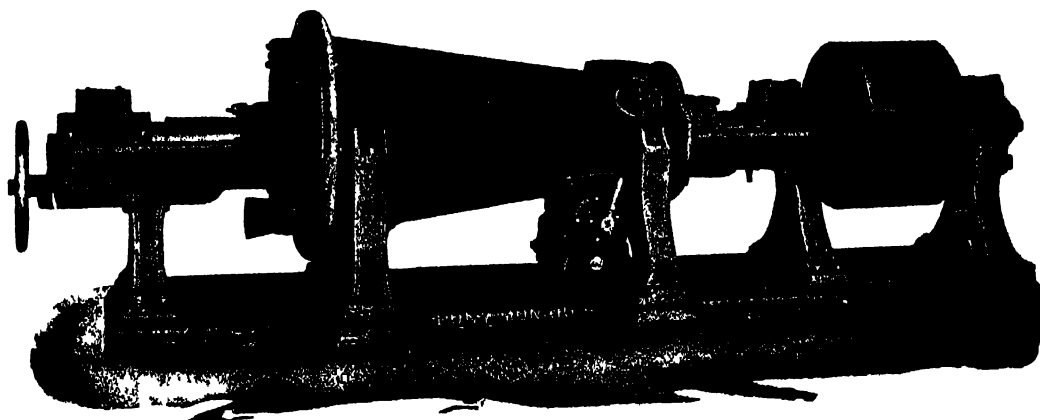
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CLASSIFIED INDEX TO ADVERTISEMENTS

	Page		Page		Page
ACID SYSTEMS.		CHEMISTS.		FILTERING SYSTEMS.	
G. D. Jensen Co.....	74	United States Testing Co.....	72	Norwood Engineering Co.....	67
ADDING MACHINE ROLLS.		CLAY.		FLOOR COVERINGS.	
Paper Manufacturers Co.....	74	Atterbury Bros.....	Front Cover	L. Sonneborn & Sons.....	70
AGALITE.		John W. Iligman Co.....	74	FLOOR HARDENER (Conorets).	
Union Talc Co.....	73	Miner Edgar Co., The.....	5	L. Sonneborn & Sons.....	70
U. S. Talc Co.....	80	Paper Makers' Chemical Co.....	61	FOURDRINIER WIRES.	
ALUM.		Star Clay Co.....	80	Appleton Wire Works.....	80
The Kalbfleisch Corp.....	42	Western Paper Makers' Chemical Co.....	61	Buchanan & Bolt Wire Co.....	76
Pennsylvania Salt Mfg. Co.....	80	CLUTCHES (Friction, Etc.).		Cable Excelsior Wire Mfg. Co.....	80
Superior Chemical Co.....	61	Hill Clutch Co.....	—	Cheney, Bigelow Wire Works.....	78
Winkler Bros., Inc.....	79	COGS.		Eastwood Wire Mfg. Co.....	80
ARCHITECTS AND ENGINEERS.		N. P. Bowsher Co.....	80	Green Bay Wire Works.....	—
George F. Drew.....	72	Menasha Wood Split Pulley Co.....	—	Lindsay Wire Weaving Co.....	79
Hardy F. Ferguson.....	72	COMPRESSORS (AIR).		Joseph O'Neill Wire Works.....	79
William T. Field.....	72	The Nash Engineering Co.....	57	The W. S. Tyler Company.....	79
George F. Hardy.....	72	CONVEYORS (Pulpwood).		FURNACE (Automatic).	
G. D. Jensen Company.....	—	Jeffrey Mfg. Co.....	—	Murphy Iron Works.....	72
Management Engineering and Development Co.....	73	Weller Mfg. Co.....	—	GAUGES (Pressure, Indicating and Recording).	
F. L. Smith.....	72	CORDAGE.		Bristol Co., The.....	—
Stebbins Engineering Co.....	73	Columbian Rope Co.....	27	GUMMING* AND GLUING MACHINERY.	
Thomas L. Tomlins & Son.....	72	CUTTERS.		Potdevin Machine Co.....	7
Vitale & Rothery.....	72	Smith & Winchester Mfg. Co.....	8	INVESTMENTS.	
Joseph H. Wallace & Co.....	72	DIE CUTTERS.		Taylor, Bates & Co.....	65
ASBESTINE PULP.		Hogson & Pettis Mfg. Co.....	2	IRON EXTRACTORS.	
International Pulp Co.....	Front Cover	Independent Die Co., Inc.....	—	Oakes Co., Roland.....	—
ASH-HANDLING MACHINERY.		DIGESTERS.		KNIVES, ETC.	
Jeffrey Mfg. Co.....	—	American Welding Co.....	12	Bolton & Son, J. W.....	9
BALL MILLS.		Biggs Boiler Works Co.....	—	Machinery Co. of America.....	—
The Crossley Machine Co.....	42	DRINKING CUPS.		LUBRICANTS.	
BARKERS.		F. N. Burt Company, Ltd.....	65	Vacuum Oil Co.....	—
Valley Iron Works.....	—	Vortex Mfg Co.....	35	MICROMETERS.	
BEARINGS (Collar Oiling).		DRIVES.		Ashcroft Mfg. Co.....	71
Hill Clutch Co.....	—	Westinghouse Electric & Mfg Co.....	—	E. J. Cady Co.....	—
BEATER PADDLES.		DRIVES (Silent Chain).		Foreign Paper Mills, Inc.....	3
Menasha Wood Split Pulley Co.....	—	Morse Chain Co.....	72	MICROMETER CALIPERS.	
BEATING ENGINES.		DYERS.		Loddell Car Wheel.....	4
Appleton Machine Co., The.....	55	Biggs Boiler Works Co.....	—	MILL COGS.	
Beloit Iron Works.....	31	DRYER EXHAUSTS.		N. P. Bowsher & Co.....	80
Claffin Engineering Co.....	—	The Nash Engineering Co.....	57	MOTORS.	
Dayton Beater & Hoist Co.....	—	DRYING SYSTEMS.		B. F. Perkins & Sons, Inc.....	11
Dillon Machine Company, Inc.....	75	Open Coil Heater & Purifier Co.....	—	MOTOR TRUCKS.	
Ditts Machine Works, Inc.....	74	W. F. Pickles.....	—	Packard Motor Car Co.....	—
Downingtown Mfg. Co.....	78	Ross Engineering Co., J. O.....	72	OILS AND GREASE.	
Emerson Mfg. Co.....	74	B. F. Sturtevant Co.....	73	Vacuum Oil Co.....	—
Noble & Wood Machine Co.....	75	DYES, ANILINE.		PACKING.	
Valley Iron Works.....	—	Heller & Merz.....	13	Jenkins Bros.....	4
BELTING.		National Aniline & Chemical Co.....	—	PAPER BAG MACHINERY.	
Goodyear Tire & Rubber Co.....	—	White Tar Aniline Corporation, The.....	4	Potdevin Machine Co.....	7
Republic Rubber Co.....	—	DYE STUFFS.		Smith & Winchester Mfg. Co.....	8
BOILERS.		Du Pont de Nemours & Co., E. I.....	—	PAPER BAG MANUFACTURERS.	
Heine Boiler Co.....	71	ELECTRIC HOISTS.		Lawrence Bag Co.....	33
BRONZE CASTINGS.		Shepherd Electric Crane & Hoist Co.....	—	Schorsch & Co.....	67
Hyde Windlass Co.....	13	ENVELOPE MACHINES.		PAPER BOX BOARDS.	
BUCKETS (Elevator).		Potdevin Machine Co.....	7	C. La Boiteaux Co.....	5
Hendrick Mfg. Co.....	10	F. L. Smith Machine Co.....	—	PAPER CUTTERS.	
CALENDER ROLLS.		FAN AND BLOWING SYSTEMS.		Hambet Machine Co.....	2
Appleton Machine Co., The.....	55	B. F. Sturtevant Co.....	73	PAPER DEALERS.	
Loddell Car Wheel Co.....	4	FAN PUMPS.		Fernstrom Paper Co.....	65
Norwood Engineering Co.....	67	Valley Iron Works.....	—	R. F. Hammond.....	Front Cover
B. F. Perkins & Sons, Inc.....	11	FELTS AND JACKETS.		PAPER EXPORTERS.	
Textile Finishing Machinery Co.....	—	Albany Felt Co.....	—	Hudson Trading Co.....	2
CARBON TOOLS.		Appleton Woolen Mills.....	8	Katzenstein & Keene, Inc.....	4
Thomas L. Dickinson.....	74	Bulkley, Dunton & Co.....	7	Parsons Trading Co.....	Front Cover
CASEIN.		Draper Bros. Co.....	67		
Casein Mfg. Co.....	3	Fitchburg Duck Mills.....	—		
CENTRIFUGAL PUMPS.		F. C. Huyck & Son.....	11		
Valley Iron Works.....	—	Knox Woolen Company.....	7		
CHAINS.		Lockport Felt Co.....	—		
Jeffrey Mfg. Co.....	—	Orr Felt & Blanket Co.....	61		
CHEMICALS, COLORS, ETC.		Shuler, Benninghofen Co.....	—		
Arnold Hoffman & Co., Inc.....	—	Waterbury Felt Co.....	71		
Du Pont de Nemours Co., E. T.....	—	Waterbury & Sons Co., H.....	73		
Heller & Merz Co.....	13	FELT ROLLS.			
Kutroff, Pickhardt & Co.....	71	Rodney Hunt Machine Co.....	71		
White Tar Aniline Corporation, The.....	4				
C. K. Williams & Co.....	80				

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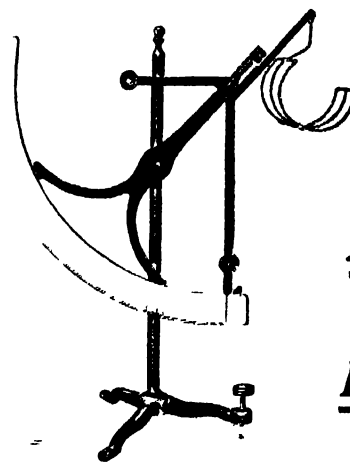
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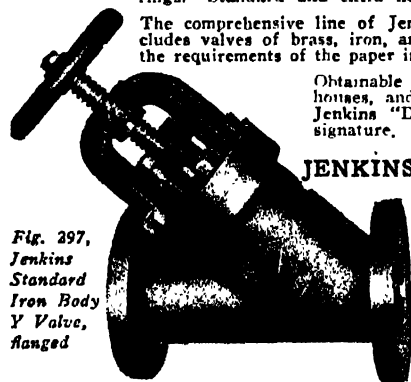
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Jenkins
Standard
Iron Body
Y Valve,
flanged

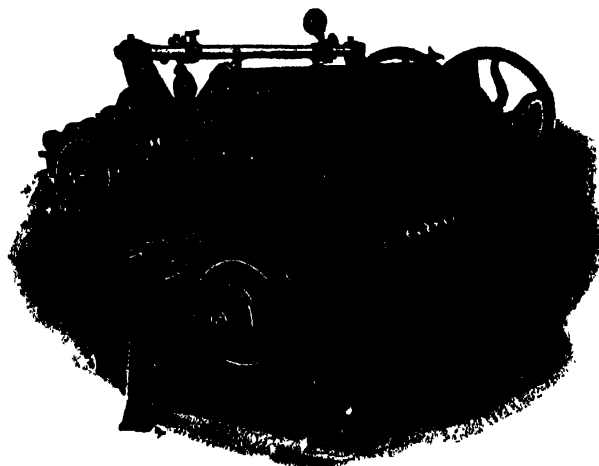


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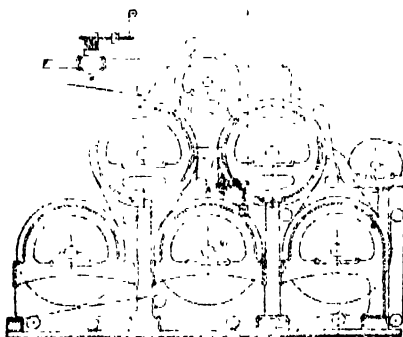
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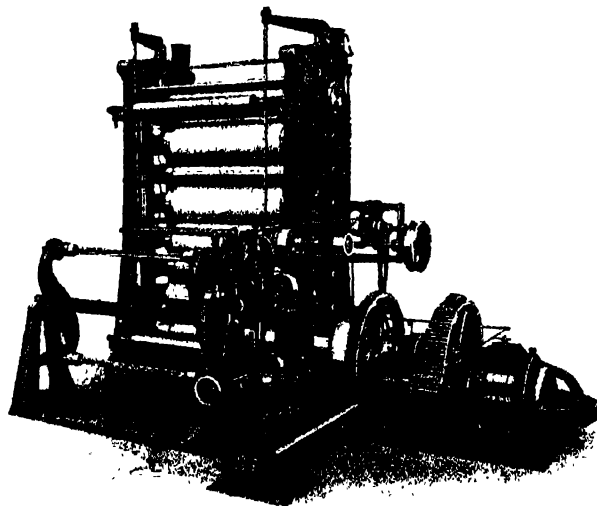
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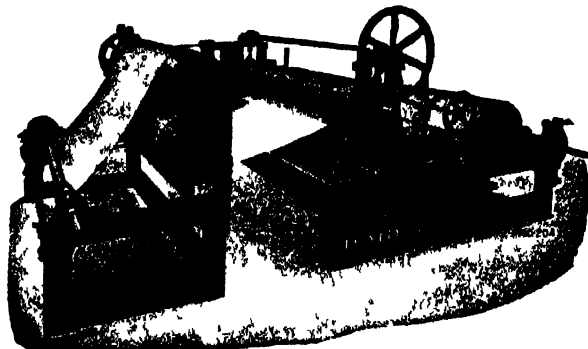
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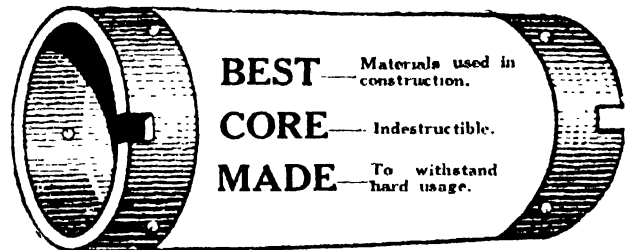
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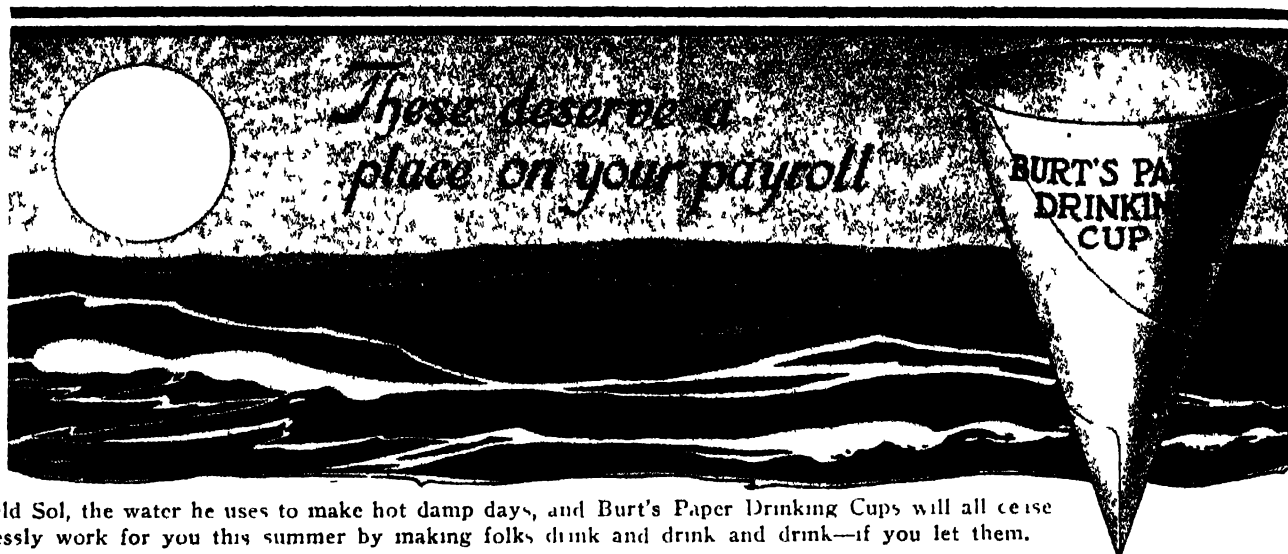
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No wax to make drink taste.
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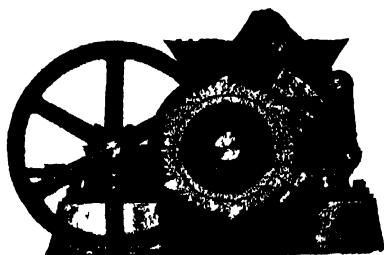
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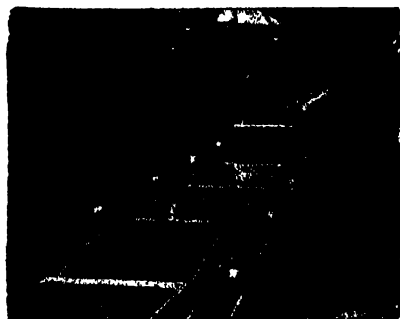
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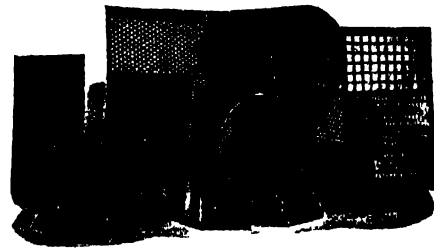
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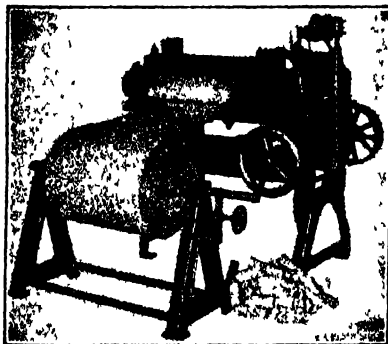
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Accurately, automatically, cheaply, with the machine exactly adapted to your requirements, developed by one of our several factories which have devoted a lifetime to perfecting this class of equipment. Automatic, semi-automatic, and hand machines; straight wheel, cup wheel, ring wheel, chuck wheel grinders, for every variety of service.

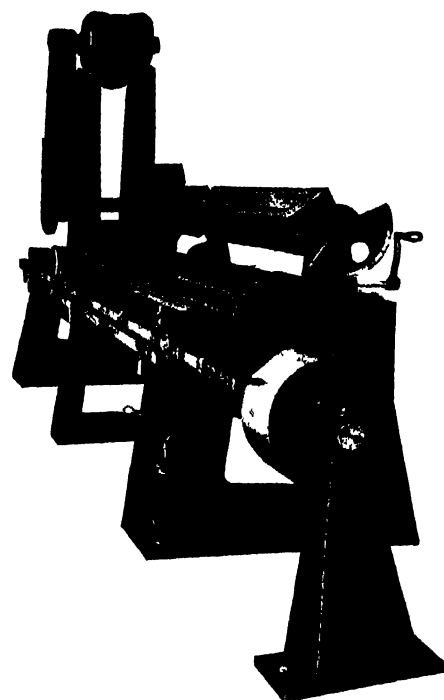
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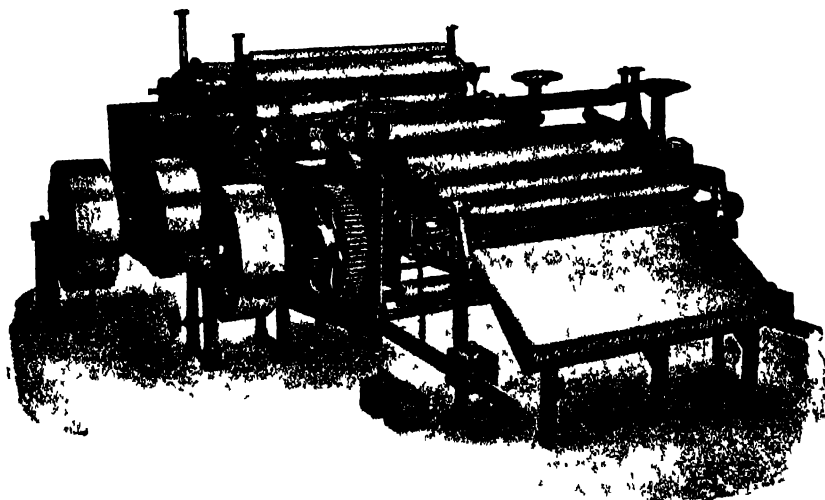


Illustration Shows Rogers Double Press Wet Machine

FOR CHEMICAL PULP—including Sulphite, Sulphate, Soda, also Cotton and Waste Paper fiber.


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SHEETS produced by the Double Press Machine uniformly 48% dry. By the Single Press Machine uniformly 40% dry. There is no fold to contain excessive moisture. Sheets are handy size, 33"x36", and are folded once into most convenient bundles for storage, for the beater or for shipping. By this great capacity, high dry test, small amount of floor space per ton pulp produced, exceedingly low cost for labor and maintenance, users are assured that the machine will completely pay for itself within one year, and are promised a handsome return on their investment.

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Try Our Split Cams for Your Flat Screens



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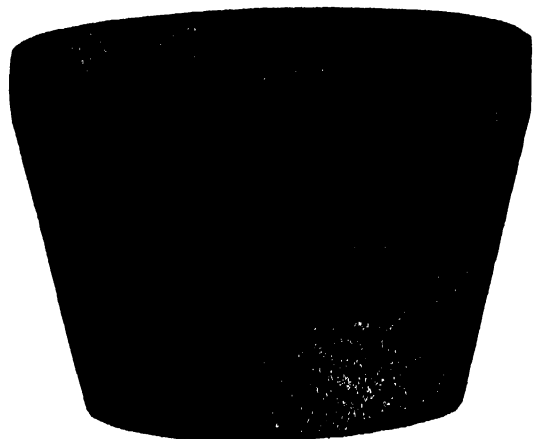
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Green Bay, Wis.

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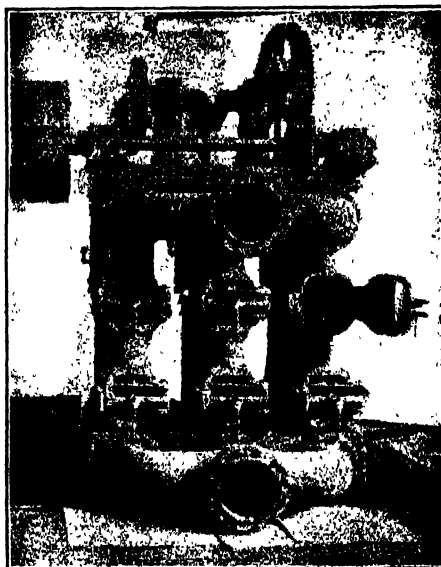
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To obtain definite results in any desired direction in the preparation of paper, not merely a difference of grade, but a difference of kind or variety of starch is required.

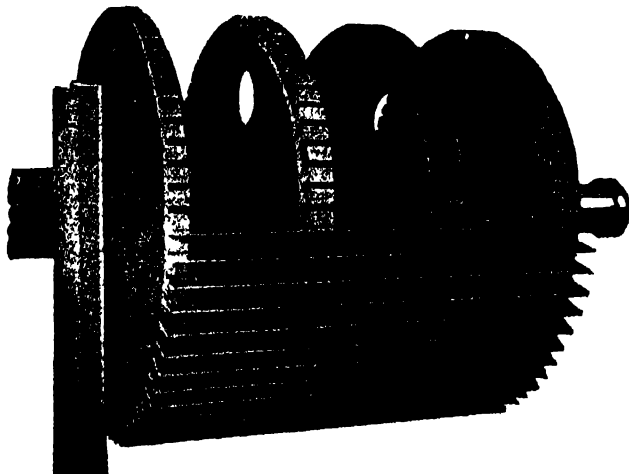
Our carefully controlled and thoroughly standardized processes enable us to produce exactly the various starches which the paper industry has found economical and efficient.

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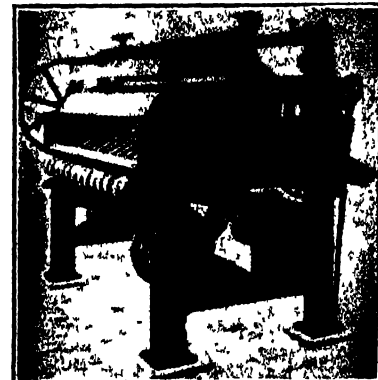
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Revolving Paper Cutters—Rag Cutters—Cylinder Paper Machines—Washing and Beating Engines—Chilled Iron and Paper Calenders—Fan and Stuff Pumps—Engine Roll Bars and Bed Plates—

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BEATING and WASHING ENGINES

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Our new KEYED TYPE BANDLESS ROLL is the final result of Many Years of Experience.

May we not tell you about its many advantages?

We offer a full line of

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and furnish precise directions on application for

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Half a century's experience enables us to furnish goods answering requirements
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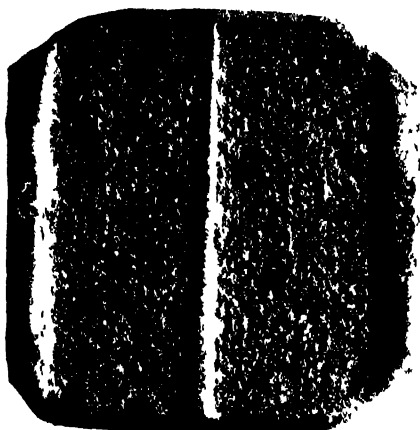
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PHILADELPHIA

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felt under same pres-
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Felt under pressure*



It's a matter of simple demonstration

The KENWOOD One-Sided Board Felt Combination

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"A splendid sheet, very smooth surface and wonderful finish. Good, safe 100 test and a very superior sheet."

Kenwood One-Sided Felts give longer service because they are stronger—give better finish because they are smoother—give greater speed because they are more open.

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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTY-FIRST YEAR

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NEW YORK AND CHICAGO

Thursday, August 3, 1922

Table of Contents

News of the Trade:

	PAGE
Paper Bids for Government Printing Office.....	16
Advances Announced in Philadelphia Market.....	28
The Proper Function of the Jobber.....	28
To Make Pinco Papers at Camden.....	30
Now the Lincoln Mills, Ltd.....	30
Paper Demand Improves in Fox River Valley.....	32
Peshtigo Paper Co. to Start Reconstruction.....	32
To Enlarge Thunder Bay Plant.....	32
Freight Rates on Paper From Kalamazoo Reduced.....	32
Toronto Paper Market Shows Summer Quietude.....	34
Plans for Kammistiquia Mill.....	34
Dryden Paper Co. Expansion.....	34
Chicago Market Unsettled by Strike.....	36
Chicago Salesmen Meet at Old Colony Club.....	36
May Dismiss Misbranding Cases.....	36
Ask Receiver for Prince Rupert Paper Co.....	36
John McCluskey Leaves Piercefield Mill.....	40
Senate Discusses Paper Tariff.....	45
May Reject All Paper Bids.....	45
Pulp & Paper Products Co. to Start Mill.....	45
Some Interesting Sidelights on Tariff History.....	57
The Swedish Pulp and Paper Market.....	57
Donnacona Co. Shipping by Boat.....	57
Recent Incorporations.....	58
Concerned About Coal in Miami Valley.....	58
G. H. Carter Makes Report on Paper and Printing.....	58
Interest in Purifying Streams in New York.....	58
Eastern Mfg. Co. Passes Dividends.....	58
Trade Mark Department.....	64
Report on Brompton Co.....	64

Editorial:

	PAGE
To Go With Union Paper & Twine, Detroit.....	64
Drought in Northern Quebec.....	64
Imports and Exports of Paper and Paper Stock.....	68
The Paper Bids.....	44
Paper Mills Busier.....	44

Technical Section:

	PAGE
Paper Testing Methods.....	47
Paper Day at Chemical Exposition.....	50
Pulp Possibilities on the Pacific Coast.....	51
New Map of Maine.....	53
Current Paper Trade Literature.....	54
West African Corkwood.....	54
Corrugated Paper Board Tester.....	54
Waterproofing Paper Yarn.....	55
Washington as a Source of Pulp Wood.....	55
Electricity in the Paper Mill.....	56
The Technical Man's Duties.....	56

Obituary:

	PAGE
Leon Gottheil.....	38
Theodore R. Adams.....	38
Mrs. Maurice Costello.....	38

Market Review:

	PAGE
New York Market Review.....	66
Market Quotations.....	67
Miscellaneous Markets.....	70

Want and For Sale Advertisements, Pages 72 and 73

PAPER BIDS FOR GOVERNMENT PRINTING OFFICE

Joint Congressional Printing Committee With Senator Moses of New Hampshire Presiding Opens Bids on Numerous Varieties of Paper for the Government Printing Office for the Six Months Beginning September 1—Contrary to Expectations Little Interest Is Displayed in the Opening and Only Eighteen Bids Are Received—Awards to Be Made Monday, August 7.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 31, 1922.—Bids were opened today before the Joint Committee on Printing, Senator Moses presiding. Several bidders were present but not so many as anticipated, and only 18 bids were received, contrary to the expectation of the Government Printing Office which had anticipated a much larger number of bids.

The Committee will meet to consider the bids and make the awards for the six months beginning with September 1 on Monday next. The Government Printing Office was represented by the Public Printer, Ernest E. Emerson, Purchasing Agent, William H. Kerbin, Storekeeper.

The bids were as follows:

Printing Papers

- No. 1—40,000 lbs., White News, 24x36—32 lbs.; rolls, 19 ins. wide.
Dobler & Mudge, Baltimore, Md., 4.3c.
International Paper Company, New York, 4.36c.
- No. 2—1,000,000 lbs., White News, 24x36—32 lbs.; rolls, 48 ins. wide.
Dobler & Mudge, 4.3c.
International Paper Company, 4.36c.

Machine-Finish Printing, No. 1

- No. 3—150,000 lbs., 25x38—35 lbs.; cut 24x32 ins. flat.
Dobler & Mudge, 6.47c., 10c. per 100 pounds reduction if packed flat in skeleton frames.
International Paper Company, 6.76c.
The Champion Fibre Company, Cincinnati, Ohio, 7.41c.
Old Dominion Paper Company, Norfolk, Va., 8.053c., reduction of 25.01c. per cwt if packed flat in skeleton cases.
- No. 4—600,000 lbs., 25x38—35 lbs.; cut 24x38 and 38x48 ins. flat.
Dobler & Mudge, 6.72c., reduction of 10c. if packed flat in skeleton frames.
International Paper Company, 6.76c.
Old Dominion Paper Company, 8.053c.; 25.01c. reduction if packed in skeleton frames.
- No. 5—600,000 lbs., 25x38—35 lbs.; cut 24x38 and 38x48 ins. flat.
Dobler & Mudge, 6.92c., 10c. reduction if packed in skeleton frames.
International Paper Company, 6.76c.
Old Dominion Paper Company, 8.053c.; 25.01c. reduction if packed in skeleton cases.
- No. 6—700,000 lbs., 25x38—35 lbs.; rolls, 38 and 48 ins. wide.
Old Dominion Paper Company, 6.489c.; 60 per cent of same to be in 38 inch rolls.
R. P. Andrews Paper Company, Washington, D. C., 6.49c.
- No. 7—1,000,000 lbs., 25x38—35 lbs.; rolls, 18, 19, 21, and 23 ins. wide.
Dobler & Mudge, 6.22c.; 10c. reduction if packed in skeleton frames.
International Paper Company, 6.25c.
Old Dominion Paper Company, 6.489c.
- No. 8—700,000 lbs., 25x38—35 lbs.; rolls, 38 and 48 ins. wide.
Old Dominion Paper Company, 6.489c.; 60 per cent of same to be in 38-inch rolls.
R. P. Andrews Paper Company, 6.49c.
- No. 9—100,000 lbs., 25x38—40 lbs.; rolls, 38 and 48 ins. wide.
Old Dominion Paper Company, 6.089c.; 60 per cent of same to be in 38 inch rolls.
P. H. Glatfelter Company, Spring Grove, Pa., 5.60c.

Nos. 10, 11, 12 and 13—No bids desired.

- No. 14—40,000 lbs., 25x38—40 lbs.; rolls, 19 ins. wide.
Dobler & Mudge, 6.12c.; 10c. reduction if packed in skeleton frames.
Old Dominion Paper Company, 7.494c.; in CL lots 6.922c.
- No. 15—300,000 lbs., 25x38—40 lbs.; cut 24x38 and 38x48 ins. flat.
Dobler & Mudge, 6.47c.; 10c. reduction if packed in skeleton frames.
International Paper Company, 6.52c.
Old Dominion Paper Company, 6.589c.
P. H. Glatfelter Company, 5.8c.

- No. 16—250,000 lbs., 25x38—40 lbs.; rolls, 36¾ ins. wide.
Dobler & Mudge, 6.12c.; 10c. reduction if packed in skeleton frames.
Old Dominion Paper Company, 6.922c.
P. H. Glatfelter Company, 5.6c.
- No. 17—50,000 lbs., 25x38—50 lbs.; rolls, 33¾ ins. wide.
Dobler & Mudge, 5.72c., 10c. reduction if packed in skeleton frames.
International Paper Company, 5.85c.
Old Dominion Paper Company, 6.127c.
P. H. Glatfelter Company, 5.6c.
- No. 18—200,000 lbs., 25x38—50 lbs.; cut 24x38, 28x40, 32x42, 38x48, and 41x52 ins. flat.
Dobler & Mudge, 6.22c., 10c. reduction if packed in skeleton frames.
International Paper Company, 6.37c.
Old Dominion Paper Company, 6.489c.
P. H. Glatfelter Company, 5.8c.
R. P. Andrews Paper Company, 6.67c.
- No. 19—150,000 lbs., 25x38—60 and 70 lbs.; cut 29x41 and 38x48 ins. flat (the grain of sheet to run as ordered).
Dobler & Mudge, 6.12c., 10c. reduction if packed in skeleton frames.
Old Dominion Paper Company, 7.456c.; 25.01c. reduction if packed flat.
P. H. Glatfelter Company, 5.8c.
- No. 20—8,000 lbs., Machine-finish, Printing Paper, No. 1, salmon, 25x38—50 lbs. flat. Minimum order, 5,000 lbs.
No bids

Plant-Fiber Machine-Finish Printing, No. 1

- No. 21—250,000 lbs., 25x38—40 lbs.; rolls, 19, 38, and 48 ins. wide.
No bids.
- No. 22—250,000 lbs., 25x38—40 lbs.; rolls, 19, 38, and 48 ins. wide.
No bids.

Antique Printing

- No. 23—15,000 lbs., 25x38—50 lbs.; cut 25x38, 29x41, and 38x50 ins. flat.
Dobler & Mudge, 6.22c.
International Paper Company, 6.62c.
Old Dominion Paper Company, 7.239c.
P. H. Glatfelter Company, 6.25c.

Opaque Printing, High Machine Finish

- No. 24—15,000 lbs., 25x38—30 lbs.; cut 32x48 and 38x48 ins. flat.
No bids

Rag Machine-Finish Printing

- No. 25—150,000 lbs., 25x38—40 lbs.; cut 32x48 ins. flat.
No bids.
- No. 26—100,000 lbs., 25x38—40 lbs.; cut 38x48 ins. flat.
No bids.
- No. 27—100,000 lbs., 25x38—40 lbs.; cut 38x48 ins. flat.
No bids.
- No. 28—50,000 lbs., 25x38—40 and 45 lbs.; cut any size, flat, max. width 42 ins.
No bids.
- No. 29—50,000 lbs., 25x38—40 and 45 lbs.; cut any size, flat, max. width 42 ins.
No bids.

Sized and Supercalendered Printing (Sample A)

- No. 30—40,000 lbs., 25x38—45 lbs.; cut 24x32 and 32x48 ins. flat.
Dobler & Mudge, 6.97c.; 10c. reduction if packed flat.
Old Dominion Paper Company, 8.849c.; in CL lots, 8.274c.
- No. 31—300,000 lbs., 25x38—45 lbs.; cut 31¼x45½ ins. flat.
Dobler & Mudge, 6.97c.; 10c. reduction if packed flat.
Old Dominion Paper Company, 8.274c.; 7,397 on lot of 100,000 pounds; reduction of 25.01c. if packed flat.

- No. 32—500,000 lbs., 25x38—50 lbs.; cut 24x38 and 38x48 ins. flat.
 Dobler & Mudge, 6.47c.; 10c. reduction if packed flat.
 International Paper Company, 6.62c.
 Old Dominion Paper Company, 7.944c.; on lot of 100,000 pounds, 7.267c.; reduction of 25.01c. per 100 pounds if packed flat in skeleton cases.
 P. H. Glatfelter Company, 6.0c.

- No. 33—250,000 lbs., 25x38—45 lbs.; rolls, 19 and 38 ins. wide.
 Old Dominion Paper Company, 7.439c.; on lot of 100,000 pounds, 7.01c.; reduction of 25.01c. per 100 pounds if packed flat in skeleton cases.

- No. 34—5,000 lbs., 25x38—45 and 50 lbs.; cut any size, flat, max. width 42 ins.
 No bids.

Sized and Supercalendered Printing (Sample B)

- No. 35—10,000 lbs., 25x38—40, 45, and 50 lbs.; cut any size, flat max. width 42 ins.
 No bids.

Halftone Printing

- No. 36—100,000 lbs., 25x38—70 lbs.; cut 24x38 and 38x48 ins. flat.
 Dobler & Mudge, 6.22c.
 International Paper Company, 6.87c.
 Old Dominion Paper Company, 6.489c.
 R. P. Andrews Paper Company, 6.67c.

Single-Coated Both Sides Book

- No. 37—50,000 lbs., 25x38—70 lbs., cut any size, flat, max. width 42 ins.
 Dobler & Mudge, 8.49c.; subject to order being placed first week in September and that not less than 50 per cent be shipped before November 1.

Double-Coated One Side Book (Sample A)

- No. 38—5,000 lbs., 25x38—70 lbs.; cut any size, flat, max. width 42 ins.
 Dobler & Mudge, 9.75c.; subject to order being placed first week in September and that not less than 50 per cent be shipped before November 1.

Double-Coated Both Sides Book (Sample A)

- No. 39—80,000 lbs., 25x38—70 and 80 lbs.; cut any size, flat, max. width 42 ins.
 Dobler & Mudge, 9.2c.; subject to order being placed first week in September and that not less than 50 per cent be shipped before November 1.

Double-Coated One Side Book (Sample B)

- No. 40—5,000 lbs., 25x38—70 lbs.; cut any size, flat, max. width 42 ins.
 Dobler & Mudge, 12c.

Double-Coated Both Sides Book (Sample B)

- No. 41—25,000 lbs., 25x38—70 and 80 lbs.; cut any size, flat, max. width, 42 ins.
 Dobler & Mudge, 12.5c

U S M O Writing

- No. 42—1,500 lbs., No. 16; rolls, 8½ ins. wide.
 R. P. Andrews Paper Company, 12.2c.

White French Folio

- No. 43—750 lbs., No. 10, cut 17x22 ins., flat, min. order, 750 lbs.
 No bids.

Writing, White and Colored, High Machine Finish

- No. 44—25,000 lbs., White Writing Paper, No. 13; cut 23x32 ins. flat.
 International Paper Company, 8.53c.
 The Champion Fibre Company, 8.28c.
 Old Dominion Paper Company, 7.739c.; 15.01c. per 100 pounds reduction if packed flat, wrapped.
 Whiting-Patterson Company, Incorp., Philadelphia, Pa., 8.38c.
 The Actna Paper Company, Dayton, Ohio, 9.24c.; reduction of 8c. per 100 pounds if packed flat.
 The Whitaker Paper Company, Baltimore, Md., 10.31c.; reduction of 15c. per 100 pounds if packed flat.

- No. 45—300,000 lbs., White Writing Paper, No. 16; cut 21½x32½ and 26x34½ ins. flat.
 International Paper Company, 7.49c.
 The Champion Fibre Company, 7.58c.
 Old Dominion Paper Company, 7.239c.; reduction of 15.01c. per 100 pounds if packed flat, wrapped.

Whiting-Patterson Company, Incorp., 7.23c.

R. P. Andrews Paper Company, 6.79c.

The Actna Paper Company, 8.24c.; reduction of 8c. per 100 pounds if packed flat, wrapped.
 The Whitaker Paper Company, 9.94c.; reduction of 15c. per 100 pounds if packed flat, wrapped.

- No. 46—300,000 lbs., White Writing Paper, No. 20; cut 17x28 and 21x32 ins. flat.

International Paper Company, 7.39c.

The Champion Fibre Company, 7.18c.

Old Dominion Paper Company, 7.189c.; 15.01c. reduction per 100 pounds if packed flat, wrapped.

Whiting-Patterson Company, Incorp., 7.13c.

R. P. Andrews Paper Company, 6.79c.

The Actna Paper Company, 8.24c.; subject to reduction of 8c. per 100 pounds if packed flat, wrapped.

The Whitaker Paper Company, 9.94c.; subject to reduction of 15c. per 100 pounds if packed flat, wrapped.

- No. 47—40,000 lbs., White Writing Paper, No. 13; rolls, min. width 8 ins., max. width 38 ins.

International Paper Company, 6.79c.

Champion Fibre Company, 7.18c.

Old Dominion Paper Company, 8.794c.; minimum 24-inch rolls, 7.239c.

Whiting-Patterson Company, Incorp., 7.88c.

The Whitaker Paper Company, 10.44c.; reduction of 15c. per 100 pounds if packed flat, wrapped.

- No. 48—20,000 lbs., White Writing Paper, No. 161; rolls, min. width 8 ins., max. width 48 ins.

International Paper Company, 6.79c.

The Champion Fibre Company, 6.98c.

Old Dominion Paper Company, 7.349c.; in rolls 24 inch minimum width, 6.739c.

Whiting-Patterson Company, Incorp., 6.73c.

The Whitaker Paper Company, 8.88c.; reduction of 15c. per 100 pounds if wrapped.

- No. 49—300,000 lbs., White Writing Paper, No. 20; rolls, min. width 8 ins., max. width 48 ins.

International Paper Company, 6.69c.

The Champion Fibre Company, 6.88c.

Old Dominion Paper Company, 7.249c.; 6.689c. for minimum 24-inch rolls.

Whiting-Patterson Company, Incorp., 6.63c.

R. P. Andrews Paper Company, 6.39c.

The Whitaker Paper Company, 8.78c.; 15c. reduction per 100 pounds if wrapped.

- No. 50—20,000 lbs., Colored Writing Paper, blue, green, pink, and yellow, Nos. 11 and 13; cut 17x28, 21x32, and 22x34 ins. flat.
 No bids.

- No. 51—60,000 lbs., Colored Writing Paper, blue, green, pink, and yellow, Nos. 16 and 20; cut 17x28, 21x32, and 22x34 ins. flat.

Old Dominion Paper Company, 8.249c.; 5 tons or more of one color.

Whiting-Patterson Company, Incorp., 8.93c.

The Actna Paper Company, 9.44c.; reduction of 8c. per 100 pounds if wrapped flat.

White Writing, Tub-Sized, Air or Loft Dried

- No. 52—100,000 lbs., No. 13; cut 23x36, 24x38, and 28x34 ins. flat.

Old Dominion Paper Company, 15.998c.

Whiting-Patterson Company, Incorp., 13.44c.; on rosin-sized machine dried paper.

The Actna Paper Company, 13.16c.; reduction of 8c. per 100 pounds if wrapped flat.

The Whitaker Paper Company, 17.53c.; reduction of 15c. per 100 pounds if wrapped flat.

- No. 53—350,000 lbs., No. 16; cut any size; flat, min. width 17 ins., max. width 32 ins.

Old Dominion Paper Company, 12.998c.

The Actna Paper Company, 10.76c.; reduction of 8c. per 100 pounds wrapped flat.

The Whitaker Paper Company, 14.71c.; reduction of 15c. per 100 pounds if wrapped flat.

- No. 54—50,000 lbs., No. 16; cut 22½x31½ ins. flat.

Old Dominion Paper Company, 12.998c.

The Actna Paper Company, 11.06c.; reduction of 8c. per 100 pounds if wrapped flat.

The Whitaker Paper Company, 14.71c.; reduction of 15c. per 100 pounds if wrapped flat.

- No. 55—700,000 lbs., No. 20; cut any size; flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 14.2c.

Old Dominion Paper Company, 12.998c., (b) 14.229c., loft dried on poles. Only on condition that we get one or more of the other lots under this heading.

R. P. Andrews Paper Company, 14.2c.

The Actna Paper Company, 9.76c.; less reduction of 8c. per 100 pounds if packed flat, wrapped.

The Whitaker Paper Company, 14.51c.; less reduction of 15c. per 100 pounds if packed flat, wrapped.

No. 56—700,000 lbs., No. 20; cut any size; flat, min. width 17 ins., max. width 32 ins.

Old Dominion Paper Company, 12 998c.
The Aetna Paper Company, 9.76c.; less reduction of 8c. per 100 pounds if wrapped, flat.
The Whitaker Paper Company, 14.51c.; less reduction of 15 cents per 100 pounds, if wrapped, packed flat.

No. 57—250,000 lbs., No. 24; cut any size; flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 42c.
The Old Dominion Paper Company, 12 998c.; (b) 14.229c, loft dried on poles. Only on condition that we get one or more of the other lots under this heading.
R. P. Andrews Paper Company, 14.2c.
The Aetna Paper Company, 9.56c., less reduction of 8c. per 100 pounds, if packed flat, wrapped.
The Whitaker Paper Company, 14.41c., less reduction of 15c. per 100 pounds if wrapped, packed flat.

No. 58—5,000 lbs., No. 36; cut 19x24, and 20x28 ins. flat.

Old Dominion Paper Company, 12 998c., only on condition that we get one or more of the other lots under this heading.
The Aetna Paper Company, 14.06c., less reduction of 8c. per 100 pounds if wrapped, packed flat.

Colored Writing, Tub-Sized, Air or Loft Dried

No. 59—160,000 lbs., blue, buff, green, dark pink, light pink, salmon, and yellow, No. 16; cut any size; flat min. width 17 ins., max. width 32 ins.

Old Dominion Paper Company, 13 998c.
The Aetna Paper Company, 12.06c., less 8 cents per 100 pounds if packed flat, wrapped.
The Whitaker Paper Company, 15.71c., less reduction of 15 cents per 100 pounds if packed flat, wrapped.

No. 60—180,000 lbs., blue, buff, green, dark pink, light pink, salmon, and yellow, No. 20; cut any size; flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 15.2c.
Old Dominion Paper Company, 13 998c.; (b) 15.229c on loft and pole dried.
R. P. Andrews Paper Company, 15.2c.
The Aetna Paper Company, 11.96c., subject to reduction of 8c. per 100 pounds if packed flat, wrapped.
The Whitaker Paper Company, 15.51c., subject to reduction of 15c. per 100 pounds if packed flat, wrapped.

No. 61—180,000 lbs., blue, buff, green, dark pink, light pink, salmon, and yellow, No. 20, cut any size; flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 15.2c.
Old Dominion Paper Company, 13 998c.; (b) 15.229c on loft and pole dried.
R. P. Andrews Paper Company, 15.2c.
The Aetna Paper Company, 11.96c., less reduction of 8c. per 100 pounds if packed flat, wrapped.
The Whitaker Paper Company, 15.51c., subject to reduction of 15c. per 100 pounds if packed flat, wrapped.

No. 62—5,000 lbs., blue, buff, green, dark pink, light pink, salmon, and yellow, No. 24; cut any size, flat, min. width 17 ins., max. width 32 ins.

The Aetna Paper Company, 15.46c., less reduction of 8c. per 100 pounds if packed flat, wrapped.
The Whitaker Paper Company, 19.71c., less reduction of 15c. per 100 pounds if packed flat, wrapped.

Fine White Writing, Tub-Sized and Loft-Dried

No. 63—2,000 lbs., Nos. 28 and 32; cut 21x32 ins. flat, min. order, 2,500 lbs.

Dobler & Mudge, 21c.
Old Dominion Paper Company, 20.99c., (air dried)
R. P. Andrews Paper Company, 21c.
The Whitaker Paper Company, 25.25c.

Safety Writing, Machine Finish

No. 64—1,500 lbs., blue, pink, green, salmon, and yellow, No. 24; cut 17x28 and 21x32 ins. flat.

No bids.

U S M O Blue Safety Writing, Machine Finish, Safety or Sensitive Design

No. 65—250,000 lbs., No. 16; rolls, 11 and 22 ins. wide.

R. P. Andrews Paper Company, 18.8c.

Map, Lithograph Finish (Sample A)

No. 66—25,000 lbs., Nos. 16 and 20; cut any size; flat, max. width 44 ins.

a. Government Printing Office Delivery.

Dobler & Mudge, 12c.
Old Dominion Paper Company, 11.999c.
D. L. Ward Company, Philadelphia, Pa., 13.36c.
The Whitaker Paper Company, 12.49c.

b. F. O. B.

Old Dominion Paper Company, 11.129c. Loft dried on poles; f. o. b. Menasha, Wis.
D. L. Ward Company, 12.98c., f. o. b., Neenah, Wis.
The Whitaker Paper Company, 12c.; f. o. b. point not named.

Map, Lithograph Finish, Tub-Sized, Air or Loft Dried (Sample B)

No. 67—50,000 lbs., Nos. 16 and 20; cut any size; flat, max. width 44 ins.

a. Government Printing Office Delivery.

Dobler & Mudge, 16.45c.
Old Dominion Paper Company, 14.999 c. c. 1, 14.478c.
D. L. Ward Company, 15.42c.
The Whitaker Paper Company, 16.39c.

b. F. O. B.

Old Dominion Paper Company, 11.858c., f. o. b. Neenah, Wis.
D. L. Ward Company, 14.98c., f. o. b. Neenah, Wis.
The Whitaker Paper Company, 15.9c., f. o. b. point not named.

Thin Bond, White and Colored, Glazed and Unglazed, Tub-Sized, Machine or Air Dried

No. 68—120,000 lbs., No. 9; cut 17x28, 19x24, 21x32, and 22½x34½ ins. flat.

Dobler & Mudge, 15.1c.
Old Dominion Paper Company, 15.128c., less 15.01c. per 100 pounds if wrapped flat, packed.
Whiting Patterson Company, Inc., 16.34c., machine dried, rosin sized.
R. P. Andrews Paper Company, 15.1c.; less 15c. per 100 pounds if wrapped flat and packed.
The Whitaker Paper Company, 15.09c.; less 15c. per 100 pounds, if packed flat and wrapped.

No. 69 25,000 lbs., No. 13, cut 21x32, 24x38, and 28x34 ins. flat.

Dobler & Mudge, 13.6c.
The Old Dominion Paper Company, 13.628c.; less reduction of 10.01c. per 100 pounds if packed wrapped, flat.
Whiting Patterson Company, Inc., 13.44c., machine dried, rosin sized.
R. P. Andrews Paper Company, 13.6c., less reduction of 15c. per 100 pounds if wrapped, packed flat.
The Aetna Paper Company, 13.16c., less reduction of 8c. per 100 pounds if packed flat, wrapped.
The Whitaker Paper Company, 13.49c.; less reduction of 15c. per 100 pounds if packed flat, wrapped.

No. 70—2,500 lbs., blue, buff, green, pink, salmon, and yellow, No. 9; cut 17x28, 21x32, and 22x34 ins. flat.

Whiting Patterson Company, Inc., 17.31c.

No. 71—15,000 lbs., blue, buff, green, pink, salmon, and yellow, No. 13; cut 21x32, 24x38, and 28x34 ins. flat.

Dobler & Mudge, 13.6c.
Old Dominion Paper Company, 13.628c., less 10.01c. per 100 pounds if packed flat, wrapped.
Whiting Patterson Company, Inc., 14.44c., machine dried and rosin sized.
R. P. Andrews Paper Company, 13.6c., less 15c. per 100 pounds reduction if packed flat, wrapped.
The Aetna Paper Company, 14.76c., less 8c. per 100 pounds if packed flat, wrapped.

Stationery Bond, White and Colored, Glazed and Unglazed, Tub-Sized, Air or Loft Dried

No. 72—25,000 lbs., Nos. 16 and 24; cut 17x28, 18x23, and 21x32 ins. flat

Dobler & Mudge, 13c.
Old Dominion Paper Company, 13.691c.
The Aetna Paper Company, 11.16c. less reduction of 8c. per 100 pounds if packed flat, wrapped.
The Whitaker Paper Company, 14.89c., less reduction of 15c. per 100 pounds if packed flat, wrapped.

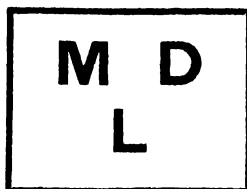
No. 73—200,000 lbs., No. 20; cut any size; flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 13c.
Old Dominion Paper Co., (a) 10.977c.; (b) 11.227c. in lots of 100,000 pounds in each instance.
R. P. Andrews Paper Company, 10.95c. for first 100,000 pounds, 11.2c. for second 100,000 pounds.
The Aetna Paper Company, 10.86c.; less reduction of 8 cents per 100 pounds if packed flat, wrapped.
The Whitaker Paper Company, 14.39c.; less reduction of 15c. per 100 pounds if packed flat, wrapped.

No. 74—5,000 lbs., blue, green, pink, salmon, and yellow, Nos. 16 and 20; cut any size; flat, min. width 17 ins., max. width 32 ins.

The Aetna Paper Company, 17.36c.; less reduction of 8c. per 100 pounds if packed flat, wrapped.

A New Sulphite for Book Mills!



CLEAN

GOOD STRENGTH

HIGH COLOR

UNBLEACHED SULPHITE

Made by the MO och DOMSJÖ A.-B., STOCKHOLM, SWEDEN

This pulp contains all the necessary requirements demanded by Mills wanting an exceptionally high color, clean, strong sulphite

*Wire us for Samples and Quotations
For Shipments over the Balance of the Year*

A. J. PAGEL & CO., Inc.

347 Madison Avenue

New York City

Fine Bond, White, Glazed and Unglazed, Tub-Sized and Loft Dried

No. 75—5,000 lbs, Nos 16, 20, and 24, cut 16x21 and 17x22 ins flat

Dobler & Mudge, 26c.
Old Dominion Paper Company, 31 99c loft dried, 25 98c air dried
R P Andrews Paper Co., 27 5c
The Whitaker Paper Company, 24 93c.

Declaration Bond, Tub-Sized and Loft Dried

No. 76—2,500 lbs, No 20, cut 17x22 ins flat, min order, 2,000 lbs

Southworth Company, Mittineague, Mass., 32c
Old Dominion Paper Company, 26 99c, air dried.
R P Andrews Paper Company, 32 5c

Parchment Deed

No. 77—1,000 lbs, Tub-sized and Loft dried, Nos 32 and 36, cut 33x34 ins flat, min order, 1,000 lbs

Southworth Company, 36c
D I Ward Company, No 30 \$127 No 37½, \$150
R P Andrews Paper Company 45c

Commercial Ledger, White, Tub-Sized, Air or Loft Dried

No. 78—60,000 lbs, No 28; cut 17x28, 18½x36, 21x32, 28x29, and 28x34 ins flat

Dobler & Mudge, 14 2c.
Old Dominion Paper Company, 14 269c, loft dried on poles
R P Andrews Paper Company, 14 23c
The Aetna Paper Company, 14 46c
The Whitaker Paper Company, 16 7c
Mathers Lamm Paper Company, Washington, D C., 18 1c

No. 79—50,000 lbs, No 32; cut 21x32 and 23x36 ins flat

Dobler & Mudge 14 2c
Old Dominion Paper Company, 14 269c, loft dried on poles
R P Andrews Paper Company, 14 23c
The Aetna Paper Company, 14 46c
The Whitaker Paper Company, 16 97c
Mathers Lamm Paper Company, 18 1c

No. 80—80,000 lbs, Nos 36 and 40, cut 19x24, 20x28, and 21x32 ins. flat (Strength shall be not less than 58 points, No. 40)

Dobler & Mudge, 14 2c
Old Dominion Paper Company 14 269c, loft dried on poles
R P Andrews Paper Company, 14 23c
The Aetna Paper Company, 14 46c
The Whitaker Paper Company, 16 97c
Mathers Lamm Paper Company, 18 1c

No. 81—5,000 lbs, No 48, cut 21x32½ ins flat (Strength shall be not less than 65 points)

Dobler & Mudge, 16 48c
Old Dominion Paper Company, 16 47½c, loft dried on poles
R P Andrews Paper Company 16 44c
The Whitaker Paper Company 17 97c
Mathers Lamm Paper Company 18 1c

Commercial Ledger, Colored, Tub-Sized, Air or Loft Dried

No. 82—60,000 lbs, blue, pink, and yellow, Nos 28, 32, and 36, cut 17x28, 18½x36, 19x24, 21x32, and 23x36 ins flat

Dobler & Mudge, 15 2c
Old Dominion Paper Company, 15 269c, loft dried on poles
R P Andrews Paper Company 15 21c
The Aetna Paper Company 18 26c
The Whitaker Paper Company, 17 97c
Mathers Lamm Paper Company, 19 5c

No. 83—30,000 lbs, blue, buff, green, pink, salmon, and yellow, No. 48, cut 21x32½ ins flat (Strength shall be not less than 65 points)

Dobler & Mudge 21 0c
The Whitaker Paper Company, 20 77c
Mathers Lamm Paper Company, 21 0c

No. 84—10,000 lbs, blue, buff, green, pink, salmon, and yellow, No 60, cut 21x32½ ins. (Without watermark. Strength shall be not less than 80 points)

Dobler & Mudge, 21 0c
Whitaker Paper Company, 22 57c
Mathers Lamm Paper Company, 21 0c.

Ledger, White, Tub-Sized and Loft Dried

No. 85—25,000 lbs, No 24; cut 17x28, 22¾x31½, and 24x38 ins flat.

Dobler & Mudge 28 97c
Old Dominion Paper Company, 24 123c.
R P Andrews Paper Company, 32 0c.
The Whitaker Paper Company, 25 97c.
Mathers Lamm Paper Company, 29 0c.

No. 86—60,000 lbs., No. 28; cut 17x28, 21x32, 23x36, and 24x38 ins. flat.

Dobler & Mudge, 28 97c.
The Old Dominion Paper Company, 24 123.
R P Andrews Paper Company, 32 0c
The Whitaker Paper Company, 25 97c
Mathers Lamm Paper Company, 29 0c

No. 87—30,000 lbs, No. 32, cut 17x28, 18½x42, 21x32, and 23x36 ins. flat.

Dobler & Mudge, 28 97c
The Old Dominion Paper Company, 24 123.
The Whitaker Paper Company, 25 97c
Mathers Lamm Paper Company, 29 0c

No. 88—20,000 lbs, No 36, cut 17x28, 20x28, and 24x38 ins. flat

Dobler & Mudge, 28 97c
The Old Dominion Paper Company, 24 123.
The Whitaker Paper Company, 25 97c
Mathers Lamm Paper Company, 29 0c

No. 89—20,000 lbs, No 40, cut 21x32½ and 21x42 ins. flat (Strength shall be not less than 88 points)

Dobler & Mudge, 28 97c
Old Dominion Paper Company, 24 623c
The Whitaker Paper Company, 25 97c
Mathers Lamm Paper Company, 29 0c

No 90—20,000 lbs, No. 48, cut 20½x24¾, 21x32½ and 22¾x31½ ins flat (Strength shall be not less than 100 points)

Dobler & Mudge 28 97c
Old Dominion Paper Company, 26 373
The Whitaker Paper Company, 25 97c
Mathers Lamm Paper Company, 29 0c

Heavy Ledger, White, Single-Ply, Tub-Sized and Loft Dried

No 91—80,000 lbs, No 60, cut 20½x30½ and 21x32½ ins. flat

Dobler & Mudge 22 6c
Old Dominion Paper Company, 22 629, Loft dried on poles
R P Andrews Paper Company 22 57
The Whitaker Paper Company, 25 97c
Mathers Lamm Paper Company, 24 98c

Tissue

No 92—1,000 lbs, White Tissue Paper, 20x30—8 lbs.; flat, min order, 500 lbs

R P Andrews Paper Company, 31 0c
The Whitaker Paper Company, 32 0c

Body Stereo

No 93—750 lbs, Body Stereo Tissue Paper, 19x24—6 lbs; min order, 750 lbs

Republic Ink & Paper Company New York City, 47 72c 19x24
6 lb 5000 sheets, 60 per cent linen and cotton, 20 per cent
twine and strings

Smooth Cover, Colored

No 94—70,000 lbs, dark blue, light blue, brown, granite, green, pink, tea, and yellow, 20x26—50 lbs, cut 20x25 and 33x46 ins flat.

Knowlton Brothers Watertown, N Y 8 765c reduction of 50 cents per pound if flat, in bundles, unwrapped
R P Andrews Paper Company, 8 48c, less reduction of 40c if unwrapped, flat, in bundles
The Whitaker Paper Company, 8 77c; less 25c. per 100 pounds if unwrapped, flat, in bundles.

Rough Cover, Colored (Sample A)

No. 95—7,000 lbs, quaker drab, robin's egg, and terra cotta, 20x25—48 lbs flat.

Knowlton Brothers, 8 565, less reduction of 50c per 100 pounds if packed flat in bundles, unwrapped
R P Andrews Paper Company, 8 48c, less reduction of 40c per 100 pounds as above
The Whitaker Paper Company, 8 77c; less reduction of 25c per 100 pounds as above

Rough Cover, Colored (Sample B)

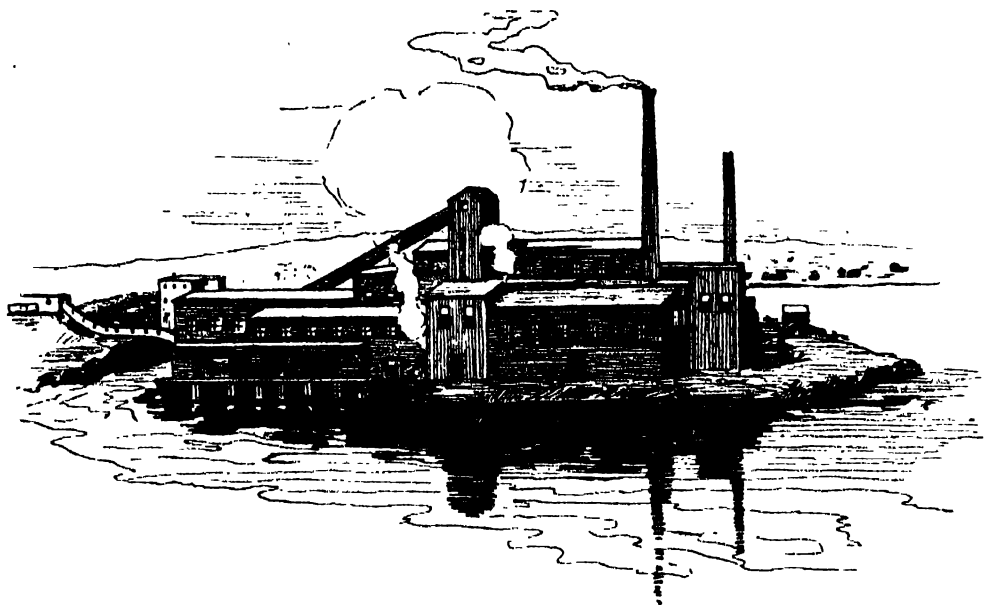
No 96—40,000 lbs, dawn, sage, goblin blue, suede, khaki, and moss green, 20x25—48 lbs flat.

Knowlton Brothers, 8 165c; less reduction of 50c. per 100 pounds if flat, in bundles, unwrapped.
R P Andrews Paper Company, 9 23c; less reduction of 40c as above
The Whitaker Paper Company, 9 17c; less reduction of 25c as above

Coated Cover, Colored

No. 97—20,000 lbs, india tint, light green, and primrose, 26½x41—104 lbs. flat.

Dobler & Mudge, 9 7c. Order must be placed before the first week in September and 50% to be delivered before November 1.



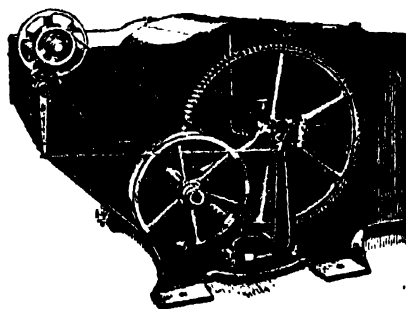
The more Water In the more Money Out

Much of the fresh water now put into shower pipes can be replaced by white water. The BIRD SELF-CLEANING SHOWER PIPE makes this possible.

An ideal arrangement is to use this new shower pipe in connection with a BIRD SAVE-ALL. In addition to performing its function as a pulp saver, the save-all acts as a filter for the white water so that it may safely be put back into the showers.

Fresh water is costly directly in proportion to the amount used. It is expensive to get into the mill. It takes with it money in the form of stock when it leaves the mill.

Watch the use of water in your mill. The more water in, the more water and money—OUT; The less water in, the more money—IN.



BIRD SAVE-ALL

- A commonsense pulp saver.
- A detector of leaks.
- A practical white water filter



Bird Self-Cleaning Shower Pipe

A practical self-cleaning shower pipe, with which white water can be safely used.

BIRD MACHINE COMPANY
SOUTH WALPOLE, MASS.

Western Representative
T. H. Savery, Jr., 1718 Republic Bldg.
Chicago, Ill.

Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Ltd.
260 St. James St., Montreal, Canada

BIRD MACHINERY

Cloth-Lined Cover

- No. 98—5,000 sheets, brown, quaker drab, russet, and white, 20x26—65 lbs
 a. Cut 20x25 ins flat
 Mathers Lamm Paper Company, 7 9c
 b. Cut 21x32 ins flat
 Mathers Lamm Paper Company, 12 0c
 c. Cut 24x36 ins flat
 Mathers Lamm Paper Company, 13 4c

Kraft Wrapping

- No. 99—20,000 lbs, 24x36—30 to 80 lbs, cut any size (Soft ream fold in bundles)
 Old Dominion Paper Company, 6 99c
 R P Andrews Paper Company, 6 0c
 The Whitaker Paper Company, 7 27c

Wood Manila

- No. 100—50,000 lbs, 24x36—38 to 60 lbs, cut 21x32 and 25x38 ins flat
 Samuel S. Alcorn, Philadelphia, Pa, 55c
 Old Dominion Paper Company, 6 39c, carloads, 5 62c
 R P Andrews Paper Company, 5 44c
 No. 101—350,000 lbs, 24x36—38 to 60 lbs; rolls, min width 6 ins, max width 48 ins
 Samuel S. Alcorn, 5 05c
 Old Dominion Paper Company, 4 99c
 R P Andrews Paper Company, 4 94c

Sulphite Manila, High Finish

- No. 102, 100,000 lbs, 24x36—133 lbs, cut any size; flat
 Samuel S. Alcorn, 6 25c
 The Champion Fibre Company, Cincinnati, 6 53c
 Old Dominion Paper Company, 6 06c
 R P Andrews Paper Company, 7 1c
 No. 103—30,000 lbs, 24x36—80 lbs, rolls, 18 ins wide
 Samuel S. Alcorn, 6 0c
 The Champion Fibre Company, 6 23c
 Old Dominion Paper Company, 5 99c, in one shipment 6 3c regular
 R P Andrews Paper Company, 6 6c

Rope Manila

- No. 104—10,000 lbs, 24x36—60 lbs; cut 24x38, 27x38, and 40x42 ins flat
 No bids
 No. 105—15,000 lbs, 24x36—70 lbs, cut 24x38 ins flat
 No bids
 No. 106—25,000 lbs, 24x36—80 lbs; cut 27x38, 33x33, and 38x38 ins flat
 The Whitaker Paper Company, 11 47c
 No. 107—30,000 lbs, 24x36—140 lbs, cut 24x38 ins. flat
 The Whitaker Paper Company, 11 47c
 No. 108—5,000 lbs, 24x36—70 lbs, rolls, min width 6 ins, max. width 36 ins
 No bids

Oiled Manila Tympan

- No. 109—10,000 lbs, 24x36—86 lbs; rolls, 19, 38, 48 and 55 ins wide; max weight 150 lbs
 Old Dominion Paper Company, 9 98c

Manila Board

- No. 110—40,000 lbs, 22½x28½—75 lbs; rolls, 21¾ ins wide.
 Samuel S. Alcorn, 4 95c
 Old Dominion Paper Company, 4 99c

Manila Cardboard

- No. 111—20,000 lbs, 22½x28½—200 lbs.; cut 17x28, 21x32, and 22½x28½ ins. flat.
 Carter Rice & Co., Corporation, 5 8c
 Dobler & Mudge, 5 75c
 Samuel S. Alcorn, 5 50c
 Old Dominion Paper Company, 6 89c

Manila Tag Board, Calendered

- No. 112—50,000 lbs., 22½x28½—75 lbs.; rolls, 24 and 26¾ ins. wide.
 Old Dominion Paper Company, 6 89c; in carloads, 6 39c.
 R. P. Andrews Paper Company, 7.0c.

Colored Cardboard

- No. 113—10,000 lbs, ash gray, blue, buff, green, lemon, and orange, 22x28—196 lbs. flat, min. order, 2,000 lbs.
 Old Dominion Paper Company, 8 99c
 R P Andrews Paper Company, 9 42c
 Mathers Lamm Paper Company, 9 44c

White China Board

- No. 114—10,000 lbs, 22x28—196 lbs. flat, min order, 2,000 lbs.
 Old Dominion Paper Company, 7 99c
 R P Andrews Paper Company, 8 4c
 Mathers Lamm Paper Company, 8 38c

Colored Bristol Board

- No. 115—120,000 lbs, buff, blue, gray, green, melon, pink, quaker drab, and yellow, 21x31—102 lbs flat
 Carter Rice & Co., Corporation, 5 23c
 Deerfield Valley Paper Company, Boston Mass, 4 87c
 Dobler & Mudge, 5 27c
 Republic Bag and Paper Company, 5 23c (all or none)
 The Whitaker Paper Company, 5 23c
 No. 116 150,000 lbs, blue, brown, gray, green, melon, pink, and yellow, 22½x28½—100 lbs, rolls, 20 ins wide
 Carter Rice & Co., Corporation, 4 79c
 Deerfield Valley Paper Company, 4 7c
 Dobler & Mudge, 5 0c
 Republic Bag and Paper Company, 4 88c (all or none)
 The Whitaker Paper Company, 4 99c
 No. 117—150,000 lbs, blue brown gray, green melon, pink, and yellow, 22½x28½—100 lbs, rolls, 20 ins wide
 Carter Rice & Co., Corporation, 4 79c
 Deerfield Valley Paper Company, 4 7c
 Dobler & Mudge, 5 0c
 Republic Bag and Paper Company, 4 88c (all or none)
 The Whitaker Paper Company, 4 99c

White and Colored Bristol Board, No. 1

- No. 118—50,000 lbs, White Bristol Board, 22½x28½—120 lbs cut 21x32 and 22½x28½ ins flat
 Carter Rice & Co., Corporation, 11 17c, carloads 10 92c
 Old Dominion Paper Company, 12 99c
 No. 119—5,000 lbs, blue, brown, gray green, melon, pink and yellow, 22½x28½—100 lbs flat
 No bids

U. S. Postal Card Cream Bristol

- No. 120—350,000 lbs, 22½x28½—104 lbs, rolls, 44½ ins wide
 Champion Coated Paper Company, Hamilton, Ohio, 6 95c
 The Champion Fibre Company, 6 66c
 R P Andrews Paper Company, 6 63c, 600,000 pounds only
 The Whitaker Paper Company, 6 89c

Index Bristol Board

- No. 121—1,000 lbs white, 22½x28½—181 lbs flat
 No bids
 No. 122—3,000 lbs, blue, buff, fawn, green, pink, salmon, and yellow, 22½x28½—181 lbs. flat
 No bids

White Paraffin

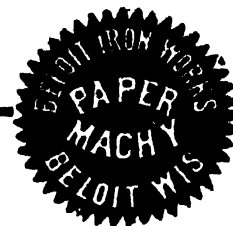
- No. 123—1,000 lbs, 24x38—16 lbs. flat, min order, 500 lbs
 The Whitaker Paper Company, 14 0c

White and Colored Noncurling Gummed

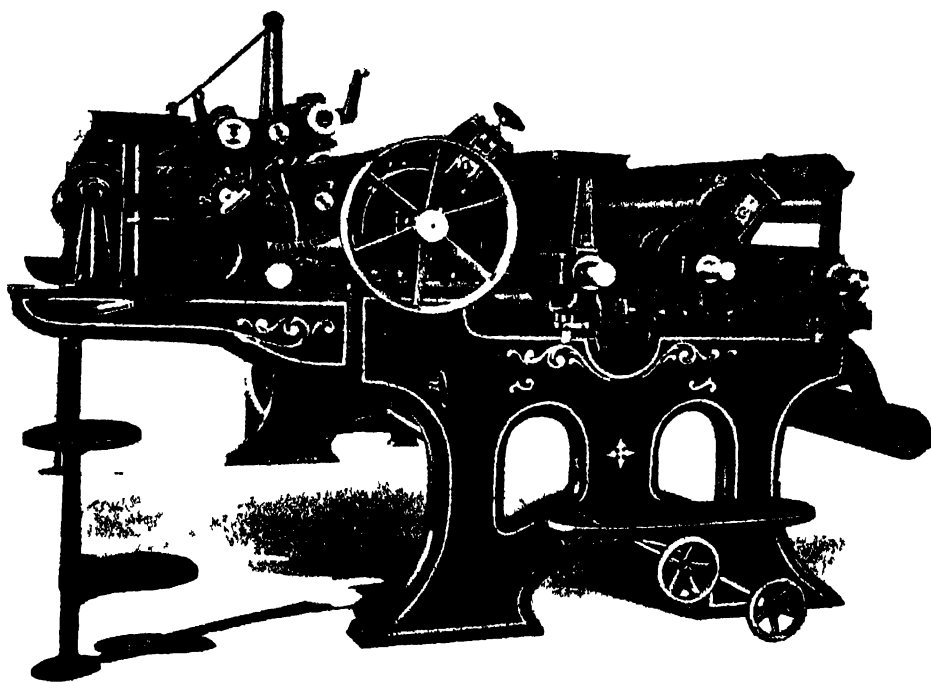
- No. 124—2,000 lbs, white, 17x22—23 lbs and 20x24—30 lbs flat, min order, 250 lbs
 R P Andrews Paper Company, 14 4c
 Mathers Lamm Paper Company, 15 9c
 No. 125—250 lbs, blue and pink, 17x22—23 lbs and 20x24—30 lbs flat, min order, 250 lbs.
 R P Andrews Paper Company, 20 4c

***Blotting**

- No. 126—1,000 lbs., white, blue, and pink, 60 and 80 lbs.; cut 19x24 ins. flat, min. order, 500 lbs.
 D. L. Ward Company, 9 5c.
 R. P. Andrews Paper Company, 8 82c.
 The Whitaker Paper Company, 9 41c
 Mathers-Lamm Paper Company, 8 23c.
 Old Dominion Paper Company, 8 99c.



How to Operate The Beloit Duplex Slitter



First—Screw top slitter shafts toward back of machine with handle as far as possible before setting idle slitters or before swinging up those that are working

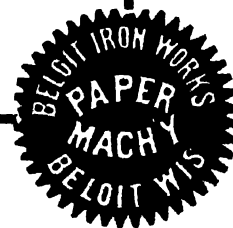
Second—To set bottom slitters, place end of measuring stick against angle on front main stand, then set slitters required distance apart and set up clamp hubs

Third—To set top slitters, set first top slitter same distance from angle as first bottom slitter, move collar against slitter hub and fasten—move spring up to slitter on other side, then collar against spring, compressing slightly—repeat to set other top slitters, setting them same distances from angles as bottom slitters, leave top shaft in this position

Fourth—When ready to swing idle slitters into work, first screw back top shaft that is slitting, swing idle slitters to stop, clamp arm on front, then screw forward the top shaft just engaged, or trifle more with the handle

BELOIT IRON WORKS

BELOIT, WISCONSIN, U. S. A.



Stereotype Molding, White

No. 127—1,500 lbs., 19x24—50 lbs. flat, min. order, 1,000 lbs.

D. L. Ward Paper Company, 10.9c.
R. P. Andrews Paper Company, 9.97c.
The Whitaker Paper Company, 10.47c.
Mathers-Lamm Paper Company, 9.98c.
Old Dominion Paper Company, 10.29c.

Stereotype Molding, Red

No. 128—500 lbs., 19x24—20 lbs. flat, min. order, 500 lbs.

The Whitaker Paper Company, 12.47c.

Offset, for Web Presses

No. 129—6,000 lbs., 24x36—30 lbs.; rolls, 39 ins. wide, min. order, 2,000 lbs.

R. P. Andrews Paper Company, 7.1c.
Republic Bag and Paper Company, 6.9c.

Plate Wiping, for Embossing Presses

No. 130—1,000 lbs., 24x36—60 lbs.; rolls, without breaks or scraps, wound solid at an even tension, 4, 5, 6, 7 and 8 ins. wide, max. diameter 12 ins. with 1 1/4 ins. hole in the center.

R. P. Andrews Paper Company, 7.9c.

Back Lining, for Case-Making Machines

No. 131—800 lbs., 24x36—90 lbs.; rolls, 24 ins. wide, min. order, 1,000 lbs.

No bids.

Lining, for Headband, Lining, and Crashing Machines

No. 132—1,000, 24x36—80 lbs.; rolls, 24 ins. wide, min. order, 2,000 lbs.

R. P. Andrews Paper Company, 7.3c.
The Whitaker Paper Company, 7.31c.

Tablet Stripping

No. 133—500 lbs., 24x36—40 lbs.; rolls, 24 ins. wide, min. order, 500 lbs.

R. P. Andrews Paper Company, 7.3c.
The Whitaker Paper Company, 7.31c.

Pressboard

No. 134—1,000 lbs., 24x32 ins., weight 80 lbs to 144 sheets flat, min. order, 1,000 lbs.

R. P. Andrews Paper Company, 10.72c.
The Whitaker Paper Company, 17.3c.
Mathers-Lamm Paper Company, 11.23c.

Binder's Boards

No. 135—500 lbs., News Board, 26x38 ins., Nos. 100 and 120. (To be trimmed square on four sides.) Minimum order, 500 lbs.

The Whitaker Paper Company, 3.28c.

No. 136—220,000 lbs., Chip Board, 26x38 ins., No. 50

a. Car lots.

R. P. Andrews Paper Company, 2.98c.
The Whitaker Paper Company, 3.15c.
Mathers-Lamm Paper Company, 3.23c.

b. Less than car lots.

R. P. Andrews Paper Company, 3.07c.
The Whitaker Paper Company, 3.4c.

No. 137—40,000 lbs., Strawboard, 26x38 ins., No. 50.

a. Car lots.

R. P. Andrews Paper Company, 3.12c.

b. Less than car lots.

R. P. Andrews Paper Company, 2.40c.

No. 138—5,000 lbs., Strawboard, lined, 26x38 ins., No. 50.

R. P. Andrews Paper Company, 3.12c.

No. 139—40,000 lbs., Box Board, lined one side, rolled, flat, non-warping, of even thickness, approximately .06 in., and free from lumps, irregularities, and defects; size, 24 1/2 x 34 ins., 35 sheets to the bundle of 50 lbs.

a. Car lots.

Mathers-Lamm Paper Co., 4.0c.

b. Less than car lots.

Mathers-Lamm Paper Company, 4.25c.

No. 140—300,000 lbs., Binder's Board, No. 2 quality, rolled, flat, nonwarping, of even thickness, and free from lumps, irregularities, and defects. Boards must be springy and corners should not break readily when bent sharply. Nos. 16 to 40, 25x30 ins.

a. Car lots.

R. P. Andrews Paper Company, 3.26c.
The Whitaker Paper Company, 4.095c.
Mathers-Lamm Paper Co., 3.68c.
Republic Bag and Paper Company, 3.55c.

b. Less than car lots.

R. P. Andrews Paper Company, 3.6c.
The Whitaker Paper Company, 4.375c.
Republic Bag and Paper Company, 3.91c.

No. 141—10,000 lbs., Binder's Board, No. 1 quality, medium hard-rolled, flat, nonwarping, of even thickness and free from lumps, irregularities, and defects. Boards must be decidedly springy and corners should not break readily when bent sharply. Nos. 12 to 30, 25x30 ins.

a. Car lots.

Mathers-Lamm Paper Company, 3.80c.
Republic Bag and Paper Company, 3.965c.

b. Less than car lots.

R. P. Andrews Paper Company, 3.99c.
Mathers-Lamm Paper Company, 4.30c.
Republic Bag & Paper Company, 4.325c.

No. 142—60,000 lbs., Binder's Board, best quality hard-rolled, flat, nonwarping, of even thickness and free from lumps, irregularities, and defects. Boards must be decidedly springy and corners should not break readily when bent sharply. Nos. 18 to 45, 19x30; Nos. 16 to 90, 22x26 ins.

a. Car lots.

R. P. Andrews Paper Company, 5.0c.
Mathers-Lamm Paper Company, 5.80c.
Republic Bag and Paper Company, 3.965c.

b. Less than car lots.

R. P. Andrews Paper Company, 5.25c.
Mathers-Lamm Paper Company, 6.0c.
Republic Bag and Paper Company, 4.325c.

No. 143—10,000 lbs., Trunk Board, medium hard-rolled, flat, nonwarping, of even thickness and free from lumps, irregularities, and defects. Boards must be decidedly springy and corners should not break readily when bent sharply. Size 34x44 ins., Nos. 6 to 10.

R. P. Andrews Paper Company, 3.74c.
Mathers-Lamm Paper Company, 4.30c.
Republic Bag and Paper Company, 4.5c.

U. S. to Put Out New Envelope

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 26, 1922.—A brand-new style of stamped envelope with "class." This is Uncle Sam's latest offering to those of fastidious epistolary taste.

"No longer," said a statement today from the department, "need the public loving fancy stationery shun the office-request stamped envelopes."

The new offering, Third Assistant Postmaster General Glover said, will be "an envelope of superior grade containing excellent paper and costing but a trifle more."

It will be furnished in place of the standard-grade stamped envelope now in use, will be banded in packages of 25, and will be placed on sale at all post offices as soon as the present supply of standard quality is disposed of.

Knoxville Paper Co. May Build a Warehouse

KNOXVILLE, KY., July 31, 1922.—A reorganization and an increase in capital from \$5,000 to \$51,000 of the Knoxville Paper Co. has been effected. Nathan Marks, secretary-treasurer and general manager, is the only officer of the old firm remaining.

For the time being the present site on Jackson avenue will continue to be used.

FOR QUALITY PAPERS USE

A-1 BLEACHED SULPHITE PULP

MANUFACTURED BY

Kellner-Partington Paper Pulp Co., Ltd.

Borregaard

Norway

SOLE AGENTS FOR U. S.

J. Andersen & Co.

21 East 40th Street

New York, N. Y.

WAYAGAMACK

KRAFT PULP

*Uniform in Quality
Essential for Strength Requirement*

The Pulp and Paper Trading Company

21 East 40th St., New York, N. Y.

Sole Agents for United States for

CANADIAN KRAFT, Ltd.

Three Rivers, Canada

PRODUCTION OF WOOD PULP DURING MONTH OF JUNE

Federal Trade Statistics Show That at the End of the Month There Were on Hand at the Mills Forty-two Days' Average Supply of Groundwood; Nine Days' Average Supply of News Grade Sulphite; Seven Days' Average Supply of Bleached Sulphite; Five Days' Average Supply of Easy Bleaching Sulphite, and Eight Days' Average Supply of Mitscherlich Sulphite.

[BY OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., August 2, 1922.—In connection with the Federal Trade Commission's current statistics of the paper industry, a summary of the monthly reports from manufacturers of wood pulp and other kinds of pulp used in paper making is submitted herewith for the month of June, 1922. The table shows the kind of pulp, the stocks, production, pulp used and shipments for the month. The pulp shipped during each month represents only pulp shipped to a concern different from the one producing it. Loss of production is shown by giving the idle machine time reported by each company for each kind of pulp.

Pulp Production

The following is a tabulation of the production, pulp used by the company producing it, shipments to outside concerns, and stocks of finished pulp in tons of 2,000 pounds on an air-dry basis, for June, 1922, compared with June, 1921, for the operating mills. The average production is based upon the reports covering the years 1917 to 1921, inclusive, and the average stocks are based upon the stocks carried for the years 1919, 1920 and 1921.

	Num- ber of mills	On hand First of month Net tons	Produce- tion for month Net tons	Used during month Net tons	Shipped during month Net tons	On hand end of month Net tons
Ground Wood Pulp:						
June, 1922	158	182,867	148,328	128,712	9,747	192,736
June, 1921	165	226,089	80,337	82,467	7,890	216,069
June, 1920	167	152,973	138,949	126,886	13,696	151,340
June, 1919	162	195,080	121,659	109,892	7,010	199,837
Average			119,756			147,073
Sulphite, News Grade:						
June, 1922	61	20,604	59,734	53,263	5,614	21,461
June, 1921	53	22,250	42,194	35,211	6,478	22,755
June, 1920	64	15,553	73,935	63,824	11,194	14,470
June, 1919	63	26,690	57,709	49,377	8,933	26,089
Average			62,530			20,695

Loss of Production

MONTH OF JUNE, 1922 (WITH JUNE, 1921, FOR COMPARISON)

Grade	Lack of orders		Repairs		Other reasons		Total	
	1922	1921	1922	1921	1922	1921	1922	1921
Ground Wood Pulp:								
Number of grinders	58	56	261	201	409	462	728	719
Total hours idle	17,816	20,037	19,598	22,666	6,262	102,515*	99,676	145,218
Sulphite, News Grade:								
Number of digesters	28	31	16	26	18	28	62	85
Total hours idle	7,211	4,879	2,498	1,039	6,090	3,425	15,799	9,343
Sulphite, Bleached:								
Number of digesters	24	58	29	28	11	34	64	120
Total hours idle	2,576	8,899	923	5,188	557	1,295	4,056	15,382
Sulphite, Easy Bleaching:								
Number of digesters	9	7	0	0	0	0	9	7
Total hours idle	960	2,832	0	0	0	0	960	2,832
Sulphite, Mitscherlich:								
Number of digesters	0	7	17	12	0	0	17	19
Total hours idle	0	444	427	704	0	0	427	1,148
Sulphite Pulp:								
Number of digesters	5	30	6	1	4	0	15	31
Total hours idle	1,728	6,432	632	480	150	0	2,530	6,912
Soda Pulp:								
Number of digesters	49	109	0	0	21	0	70	109
Total hours idle	5,178	24,224	0	0	2,843	0	8,021	24,224
Other Grades:								
Number of digesters	0	2	2	0	4	0	6	2
Total hours idle	0	928	288	0	1,144	0	1,432	928
TOTAL number machines	173	300	331	268	467	524	971	1,092
TOTAL hours idle	35,469	68,675	24,366	30,077	73,056	107,235	132,891	205,987

*Includes 43,924 hours due to water and power conditions.

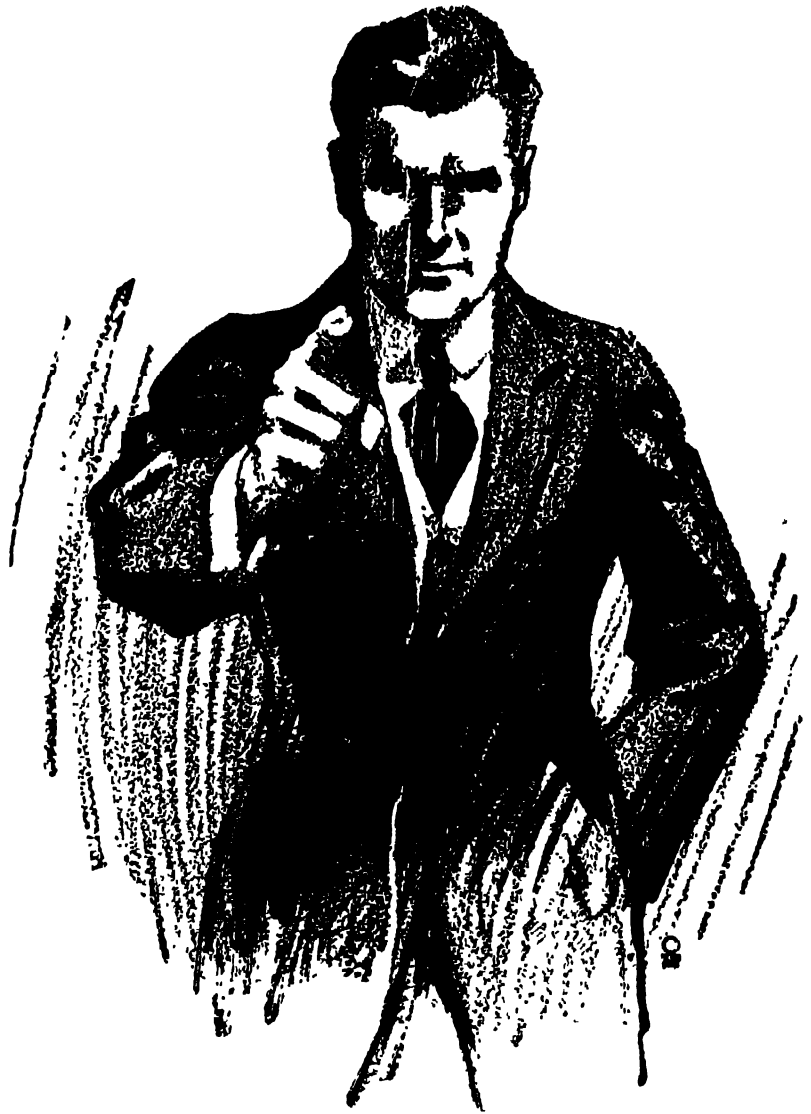
Sulphite, Bleached:						
June, 1922	33	9,756	38,300	24,756	12,076	11.2
June, 1921	31	16,614	27,324	17,809	9,661	16.4
June, 1920	32	4,296	50,741	27,542	22,209	8.26
June, 1919	31	16,431	42,185	21,761	20,145	16.71
Average			41,392			9.50
Sulphite, Easy Bleaching:						
June, 1922	10	1,686	4,721	4,274	841	1.29
June, 1921	10	1,294	5,856	3,280	3,196	6.71
June, 1920	7	858	8,133	5,322	3,102	5.0
June, 1919	8	2,919	5,552	3,875	2,117	2.42
Average			6,240			1.316
Sulphite, Mitscherlich:						
June, 1922	7	2,175	6,061	4,236	2,028	1.97
June, 1921	7	2,097	5,726	3,460	1,988	2.37
June, 1920	7	1,805	7,407	4,292	3,618	1.30
June, 1919	7	1,792	5,915	3,692	2,953	1.06
Average			6,370			1.831
Sulphate Pulp:						
June, 1922	22	7,264	31,689	16,299	4,730	7.924
June, 1921	20	7,277	10,244	8,532	2,105	6.884
June, 1920	21	4,136	20,007	12,605	8,387	3.151
June, 1919	22	9,221	12,410	9,134	4,565	7.93
Average			13,572			6.499
Soda Pulp:						
June, 1922	29	8,900	33,770	18,971	13,501	9.298
June, 1921	27	10,390	17,232	12,208	5,239	10.175
June, 1920	26	4,146	37,136	19,847	16,868	4.567
June, 1919	27	9,033	30,656	14,785	15,926	8.978
Average			30,992			6.911
Other than Wood Pulp:						
June, 1922	5	101	656	467	125	16.5
June, 1921	5	205	476	439	83	15.9
June, 1920	5	109	805	791	97	26
June, 1919	6	146	844	547	65	37.8
Average			832			15.4
TOTAL—For All Grades:						
June, 1922		332,453	313,259	250,978	48,662	246,072
June, 1921		286,216	189,389	163,406	30,640	275,559
June, 1920		183,876	337,115	261,109	79,171	180,711
June, 1919		261,264	277,142	213,161	62,012	263,233
Average			281,684			194,026

Total stocks of all grades of pulp in the mills on June 30, amounted to 246,072 tons. Mill stocks of all grades excepting Easy Bleaching and Mitscherlich, increased during the month.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic pulp mills at the end of the month with their average daily production based on the reports covering the years 1917-1921, inclusive, the figures show that:

- Groundwood pulp stocks equal 42 days' average output.
- News grade sulphite mill stocks equal 9 days' average output.
- Bleached sulphite mill stocks equal 7 days' average output.
- Easy bleaching sulphite mill stocks equal 5 days' average output.
- Mitscherlich sulphite mill stocks equal 8 days' average output.
- Sulphate mill stocks equal 15 days' average output.
- Soda pulp mill stocks equal 8 days' average output.
- Total mill stocks of all grades equal 23 days' average output.



Niagara Beaters Do Save Power

Cutting 43% in power consumption—that is the record made by one user of Niagara beaters. The figures produced below give full details. This paper-maker is producing as much with one Niagara as was formerly turned out in two Holland engines.

True—the one Niagara required a larger motor than either of the old beaters, but so great is the speed of Niagara that *the HP. hours used per ton of stock produced is materially less*. Other savings besides power alone result in the use of Niagara beaters and a better paper can be made. Let us send you full particulars.

Valley Iron Works Co.

Plant—Appleton, Wis.

New York Office—350 Madison Ave.

Here is the PROOF—

A Saving of 43 Percent

Furnish Ground Wood and Bleached Sulphite for Book Papers. Power Installed 100 HP. for 1—2000 lb. Niagara beater 150 HP. for 2—2000 lb. Holland beater

Operation	2000 lbs. Niagara			2000 lbs. Holland		
	Time in Hours	Power in HP.	Consump. in HP. Hours	Time in Hours	Power in HP.	Consump. in HP. Hours
Furnishing ...	1 1/2	60	15	5/12	40	17
Beating . . .	1/5	100	20	7/12	70	41
Emptying . .	1/20	80	4	1/4	45	11
Total	1 3/4		39	1 1/4		69

39 HP. hr. used per ton of Stock produced

69 HP. hr. used per ton of Stock produced

Saving— $\frac{69-39}{69}$ — 43% Saving in Total Power Consumption.

ADVANCES ARE ANNOUNCED IN PHILADELPHIA MARKET

These However Are Attributed More to Unusual Conditions Rather Than to the Increased Demand That Is Expected Soon—Important Suggestions Expected to Be Made at Next Meeting of the Fine Paper Division of the Philadelphia Paper Trade Association in the Matter of Doing Business in Broken Lots—Men Back from S. D. Warren Co. Summer Camp Greatly Pleased With Experience.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 1, 1922.—Price advances in several grades of paper which were reported in the Philadelphia trade during the week while they realized the prophecies made for some time past, are attributed by the distributors as due more to unusual present-day conditions than to the anticipation of the increased trading which all expect to do during a busy fall season. A well-known line of machine finished and coated book paper was advanced a half a cent a pound and an increase in the writing made by the same producer shortly is expected. News print stiffened in price but though no actual advance was announced it is regarded as imminent. Reports from Kraft mills are that they have orders ahead from two to six weeks, averaging close to four week and a rise in the No. 1 would not surprise the trade. Coated blanks of a well-known line of production were increased 10 per cent and prices have been withdrawn by a number of mills on the cheaper grades of printing papers generally. The long prophesied advance in box board and container board made its appearance during the week, quotations going up \$5 a ton, with indications of still further advances. Meanwhile, in sympathy with the cause to which these advances are ascribed, paper stock prices strengthen and slightly increased for virtually all the grades except hard white, for which there has not yet appeared any market and which is being stored in the sure conviction by the paper stock dealers that the demand will come in due time.

The actual advance on the line of book papers to which reference is made is ascribed by the trade as due rather to a readjustment than to any other cause, it being the opinion that this particular line had been offered at at least a half cent under the price which present conditions warranted and which was justified by the prices asked for competing lines. The other advances were looked upon as due to the unusual conditions of coal shortage and higher prices and of delayed freight deliveries of raw materials and the appearance of a scarcity of labor.

More Concerned About Strikes

The distributors, largely through the arguments of the mill representatives, who for the last several weeks have been importuning them to place advance orders against a shortage of supply and a rise in price, are now looking on the coal and railroad situation with much more concern than they have been. When the mill representatives first advanced their arguments for making provision now against the future, the distributors were inclined to discount these as special pleadings. However, with the great publicity now being given to both these matters attention has of course been concentrated upon them and the thought has developed that if the situation is as grave as the mill representatives describe it to be there may lie in that fact a reason for circumspection in commitments at this time. The line of reasoning is that if transportation is hampered by railroad strikes and manufacturing output decreased by coal shortage affecting the paper mills, those same causes would operate to cause a slow down in other industries and consequently a decreased demand for paper. Whether the mill men have been a

little too emphatic or whether their argument evoked consideration that had been neglected, involves a difference of opinion. On the whole the entire fine paper market is in a quite satisfactory condition and it was only during the last seven days that there appeared for the first time evidences of the usual July slow down. The trade is not at all alarmed, nor is it quite sure that the falling off during the last week of July may not end there, and that August of 1922 may be as much better than the corresponding month of last year as was July. The coarse paper trade reported a rather quiet demand during the last week and the opinion was expressed that this condition will continue during the new month, but that with September there certainly will come a revival.

The Proper Function of the Jobber

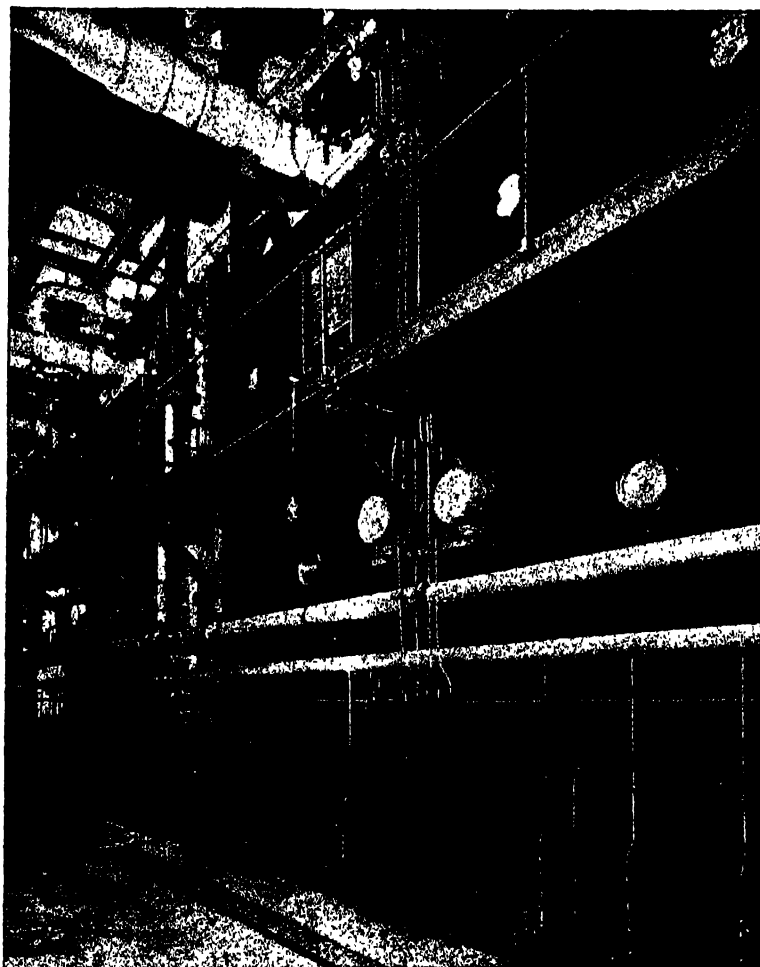
The one matter that is interesting all the trade catering to the printers and other converters of line paper is the solution of the question which every day is becoming more acute—the re-establishment of the paper distributors in their real and proper place as wholesalers of paper rather than as wholesalers and retailers combined, and the saving of the loss which they experience when to accommodate the smaller buyers they dispose of fine papers in retail lots but at wholesale prices.

The statistics of sales which all of the fine paper house have been keeping for some time as a result of the deliberations in the meeting of the Fine Paper Division of the Philadelphia Paper Trade Association show that in terms of volume about two-thirds of orders for printing papers involve less than an average of three reams per order, and a little less than three quarters of all orders are for less than case lots. It is true that present trades customs call for the imposition of an additional charge for broken cases and broken reams, but it is felt that the present charge is not sufficient to meet the additional cost which the distributors must sustain in doing this small order business. To illustrate, while at the present time an apparently large percentage of additional cost is placed on broken reams and broken quires, the distributors point out that the actual loss of stock when sheets are counted out and of course an additional number are given to be on the safe side of the count, the damage to stock by this handling and the loss in time in making the charge and the cost very often of delivery involves an actual charge against the house far larger than the additional cost which is made. The suggestion has been advanced that the percentage of margin between mill price and sales price be established at one rate for case lots and increased one for half case and a very much larger one for broken reams or even for quires. There are some who think that the proper function of the distributor is to sell without breaking mill wrappings in any case, but there is realization of the position of the average and particularly of the small printer, and therefore progress is to be made slowly and, if possible, with the co-operation of all concerned and secured through an educational campaign because without such co-operation on the part of the mill men on one hand and of the printer and other converter-consumers on the other, real and lasting progress cannot be attained. There is being looked forward to therefore with real interest and deep concern the next meeting of the Fine Paper Division at which it is expected important suggestions will be made by Chairman George W. Ward and Leon Beck, who have served on the special committee appointed to consider the problem of broken lots specifically and of the whole small order business generally and who have just returned to the city from the conference at Erie, Pa., with the mill men.

Back from Warren Summer Camp

The representatives of the D. L. Ward Company and of the Charles Beck Company co-distributors for the Philadelphia district of the S. D. Warren line of distinctive papers who returned during the week from attendance at the summer camp at the Cumberland Mill, are enthusiastic not alone over their princely reception but

(Continued on page 30)



*Boiler Plant of the
King Phillip Mills,
Fall River, Mass.*



One Fireman Replaces Nine

WHEN these four 435-b.hp. oil-fired HEINE Boilers replaced six 250-hp. water-tube boilers the boiler room force was reduced from nine firemen to one. Of course, a part of this reduction in labor was due to the introduction of oil firing, but a part of it was due also to the extraordinary facility with which the HEINE Boilers are kept in perfect operating condition.

This plant has been operating continuously for approximately two years, carrying an average load of 3500 hp. which means that these boilers have been running continuously at about 200 per cent rating, and yet there has been no sign of deterioration.

This is but one of the many HEINE plants which have demonstrated characteristics considered as highly essential by operators of modern textile mills and industrial plants—namely, continuity of service and superior fuel economy.

If boiler plants are to give perfect satisfaction, they must be designed to meet the peculiar requirements of their location and service. For this reason we maintain an engineering department composed of men having wide practical experience in different lines of boiler application. This service is at the disposal of HEINE customers.

Heine Boiler Company

SAINT LOUIS U.S.A.

ADVANCES ARE ANNOUNCED IN PHILADELPHIA MARKET

(Continued from page 28)

quite as much over the revelations in standardized paper manufacture which they saw at Cumberland. Sales manager Meinecke of the Beck Company said that he was particularly impressed with the extreme care in inspection shown in every stage of production from the log to the finished sheet, all of which was done without "frills and red-tape" and as a purely routine matter but in a spirit of loyalty to the Warren standard and of appreciation of its fine relationship with the men and the democratic spirit shown in the conduct of its business affairs. And while there was entertainment and fun making aplenty the visitors declared that the real hard work done in the class room conducted during their visit was of a highly informative, interesting, and really valuable character.

To Make Pinco Papers at Camden

The business of the late E. G. Locke, who conducted a plant for glazing, plating, coating and embossing paper and paper specialties at 9th, Baily and Erie streets, Camden, N. J., has been taken over by Thos. F. Pinder, who will continue the general line marketing the products under the title of his own brand the Pinco Papers. Mr. Pinder has had extensive practical experience with the line of manufacture of which he is now engaging for himself, having for five years served as superintendent of the coating mills and of later years as manager of the Flat Rock Mills of Dill & Collins Company in Manayunk near Philadelphia. It is planned to entirely renovate and make extensive building additions to the Camden plants which recently were acquired. A large plot of ground adjoining the present one-story factory is to be utilized by an additional structure which will increase present output by fifty per cent. A. H. Wilkins formerly of The Paper Service Company, 7th and Chestnut streets, Philadelphia, will this month be added to the sales force in the position of manager looking after the full line of sales for papers made for printers, boxmakers, lithographers, and engravers.

General News of the Trade

The Norbom Engineering Company, Inc., of Darby, just outside of Philadelphia is reported to have completed the first of eleven special machines designed to harvest saw grass in Florida swamp for papermaking. The new device is described as a combination tank and gasoline propelled barge which can be operated alike on land and in water, being equipped with a caterpillar belt and two paddle wheels. The machine is 75 feet long and 15 feet wide and is constructed of steel and wood, being equipped with two 75 horsepower gasoline engines and manned by a crew of three. The engine cuts the grass in 15 foot lengths and then chops it into pieces 3 inches long which are blown into barges for transportation to the mill. The cost of the first machine was reported to be in the neighborhood of \$80,000 while that of the other ten will be about \$50,000 each. They are being produced under a contract for the Grass Fibre and Paper Co. of Leesburg, Florida.

Arthur B. Sherrill accompanied by George Riegel, both of the Riegel Paper Company leaves the city this week for an auto trip through New England during the course of which they probably will call on some of the paper mills there. Mr. Sherrill together with James McCracken and John K. Quinn will be the Riegel & Co. representatives to the Hammermill Convention to be held in the mills at Erie on August 24, 25. F. C. Van Gilder of the sales force recently operated on for appendicitis is now at his home. Walter Parker of the fine paper sales force is spending a vacation at Wildwood.

Title was taken last week by the Franklin Paper Company whose offices are now in the Vanadium Bldg., 10th and Chestnut streets, to a five-story warehouse property at 923 Locust street, which the firm expects to occupy towards the close of the year after extensive renovations have been made.

The Bureau of Statistics and Information of the Pennsylvania

Department of Internal Affairs is making an industrial survey of the several counties of the State and during the week made public statistics concerning Clinton County which it says "Can be classed as a leader in paper manufacture for the leading item within its borders was papermaking, the value of the output last year being \$2,450,200." The paper and printing industries of the county aggregated in production last year \$2,664,600.

Philadelphia friends of Milton L. Macauley who for many years was the local manager for the Auer & Twitchell Company have learned with interest of the organization of a new concern to be known as the M. L. Macauley Company, to deal in paper of various kinds and box boards. Recently Mr. Macauley has been the New York manager for Auer & Twitchell, but has just established his new concern at 30 East 42nd street, New York, where he will represent among his mill accounts the Schmidt & Ault Paper Company, of York, Pa., manufacturer of chip and news board, for which he will be the exclusive New York representative. Mr. Macauley has a large acquaintanceship among paper and board consumers.

Production has been increased at the McDowell Paper Mills in Manayunk and they are now on a two-thirds capacity basis. They are especially busy on the manufacture of grease proof, glassiness and specially fancy wrappings.

Many of the Philadelphia paper distributors including the Thos. W. Price Company, the Philadelphia Card and Paper Company, The Garrett-Buchanan Company and the Chas. Beck Paper Company are creditors, but none for a large amount of the Gelbman Printing Company, 2532 N. 5th street, which is financially embarrassed and which has made an offer of a twenty-five per cent settlement. The creditors generally have approved the settlement rather than institute bankruptcy proceedings.

Announcement is made by the A. Hartung & Co., Inc., 506-512 Race street of the discontinuance of their New York office, which is located at 318 Broadway. It was under the direction of Robert Miles who no longer is connected with the firm and was the sales office for the box paper end of the business.

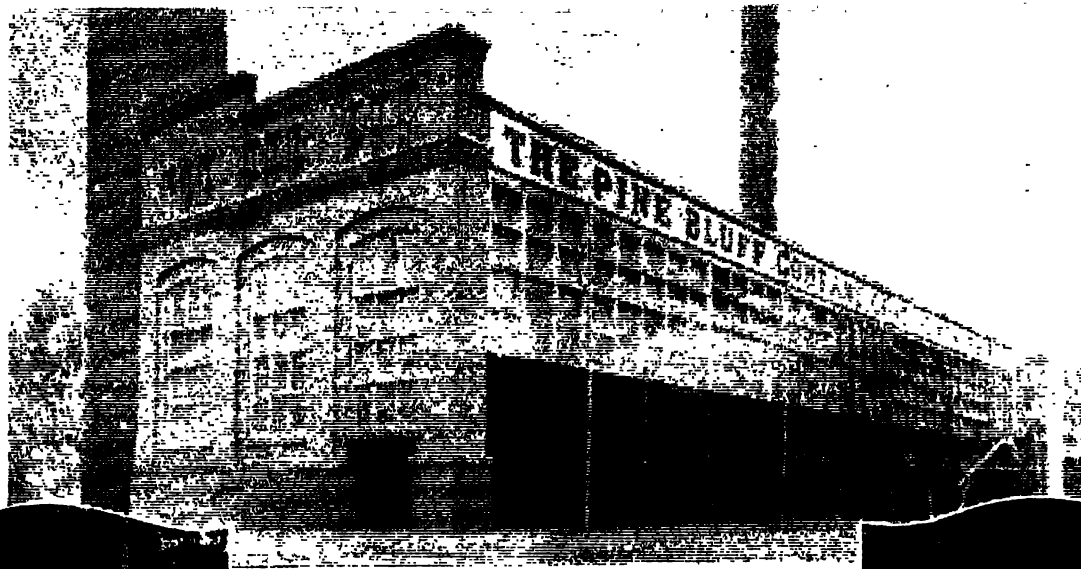
Publication in the PAPER TRADE JOURNAL of the use by Finnish paper makers of a piece of ordinary brass wire screening to patch out a brake in the Fourdrinier, as told by president Norbert A. Considine of the Paper House of Penn., has aroused very great interest. That there may be no misunderstanding Mr. Considine desires to have re-emphasized the point that the improvised wire has been in actual use during the Red Revolution but that today it is hanging in the mill office as an illustration of what could be done under stress of circumstance.

Now the Lincoln Mills, Ltd.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 25.—Announcement was made last week of the completion of the amalgamation of the Lincoln Paper Mills Company, Limited, of Merritton, Ont., and the Canadian Pulpwood Corporation, with offices at Little Cascapedia, Que., and timber limits in the Gaspé district. The new concern will be known as the Lincoln Mills, Limited. The amalgamation includes both the Lincoln and Lybster Mills. The continuous supply of high-grade pulpwood is assured and operations will be carried on as usual in the pulp and paper mills at Merritton. There will be no change in the operating staff. A. S. Woodruff, the late president, has, after long service, retired from active management, while still retaining his brother's considerable interest in the concern.

The officers of the new company are: President, J. J. Warren, president and treasurer of the Harmon Paper Company, Brownville, N. Y.; chairman of the board of directors, Ferris J. Meigs, New York City; Vice-Presidents, Walter Meigs, Ernest A. Sterling, New York; J. Gregory Smith, St. Albans, Vermont.



In the process of converting chemical energy to thermal energy and thence to mechanical energy, valves, fittings and piping equipment play an important part, and largely determine the number of k. w. hours that can be obtained per pound of coal.

CRANE Power Plant Equipment

is designed and proportioned in accordance with the most advanced steam practice, and will render dependable service under the most exacting conditions.

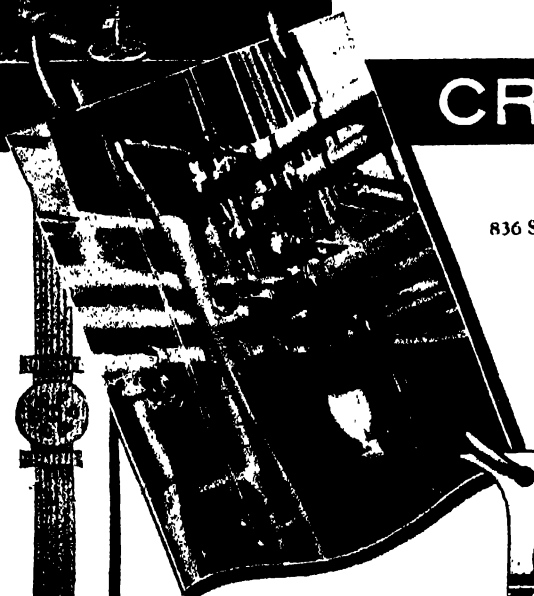
CRANE CO.

1855—1922

836 South Michigan Avenue, Chicago
Works—Chicago and Bridgeport

Branches and sales offices
in more than 100 cities

National Exhibit Rooms
CHICAGO
NEW YORK
ATLANTIC CITY



Above—Connection at a pump
Below—Section of steam lines



Above—Water circulating line
Below—Lines outside the pump house

EVERYTHING
FOR ANY
PIPE LINE

PAPER DEMAND IMPROVES IN THE FOX RIVER VALLEY

Conditions Now Said to Be Better Than at Any Time Since the Depression Started—Manufacturers Are of the Opinion That the Improvement Will Continue and That the Time Is Not Far Distant When Jobbers Will Discontinue Buying Simply for Immediate Requirements—Peshtigo Paper Co. Ready to Proceed With Reconstruction Plans—Wisconsin News of General Interest to the Trade.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., August 1, 1922—With a brisk demand, stable prices and confidence restored, the paper industry in the Fox river valley is in better condition now than at any time since the trade depression started. This was gathered from interviews with several of the leading paper mill owners in this section. Manufacturers are agreed there are indications that the improvement will continue and the time is not far distant when jobbers will buy in sufficient quantities to stock up and will cease the present hand-to-mouth policy.

Improvement in other lines of business has helped the paper industry. This steady improvement in the demand for paper has been felt for some time and the present condition is not due to a spurt in orders due to a fear on the part of jobbers that a tieup of railroad transportation will leave them without stocks.

Mill men here say the demand for news print is almost equaling the production. Writing mills are receiving many substantial orders, and there is quite an improvement in the demand for book and wrapping papers but not so pronounced as in the print and writing paper fields.

Almost every mill in the valley is operating on a full production basis, but the output does not equal the capacity of the mills. Many small orders mean constant changing of machines for different sizes, colors, weights and grades of paper and, consequently, considerable time is lost. Many of the orders are for small quantities and mills cannot keep their machines operating on one kind of paper for a long time in order to obtain maximum production.

There is every indication, however, that the time is rapidly approaching when manufacturers cannot promise immediate delivery of small orders, and that will force jobbers to place larger orders and there will be less changing of machines.

Most of the mills now are employing full crews. Where curtailment of production has been necessary the mills shortened working hours in order to keep their organizations intact.

There has been less fluctuation in paper prices and this has helped restore confidence. Mill men say the next few months will show little changes in prices.

Thus far the strike has not handicapped any of the mills in this valley or in the state. There is a possibility, however, one man said, that if there is a serious tieup some of the mills with small fuel supplies will be obliged to close down.

Peshtigo Paper Co. to Start Reconstruction

Reconstruction of the Peshtigo Paper Company fiber mill at Peshtigo was to start this week. The contractor has all his material ready and is to start work at once. Final details were arranged by W. J. Zimmerman, Dayton, Ohio, engineer, who was in Peshtigo last week. More than \$300,000 will be expended on the Peshtigo mill.

William Eibel, treasurer and manager of the Peshtigo mill, has gone to Los Angeles, Cal., where he is arranging to move his family from the coast to Menominee, Mich., where he will live.

To Enlarge Thunder Bay Plant

Plans of the Consolidated Water Power and Paper Company for enlarging its new plant in Ontario interested paper manufacturers

of Wisconsin. It has been announced at Fort Williams that the company will double the capacity of its pulp mill and construct a paper mill of 100 tons capacity. No confirmation of these plans could be secured from the Consolidated company's office at Wisconsin Rapids at this time.

It has been announced at Fort Williams that the name of the plant will be changed to The Thunder Bay Paper Company. It was known as the Kamistiquia Pulp Company before the Consolidated company acquired it.

According to information received here, the company expects to expend about \$1,000,000 in the plant.

General News of the Trade

Plans are being prepared by L. A. DeGuere of Wisconsin Rapids for a new hydro-electric power plant for the Dells Pulp and Paper Company at Lau Claire. It is reported here that construction work will be started before very long. Details of the plant have not been announced.

Frank Walsh, formerly office manager of the Ahdawagam Paper Products Company of Wisconsin Rapids, has been elected a director of the company and as secretary and general manager to succeed G. F. LaBour, who resigned some weeks ago. Officials of the company reported after the directors' meeting that prospects are excellent and they are looking for a boom in the paper products industry.

Fifteen salesmen of the Capital City Paper Company, Springfield, Ill., were in Wisconsin last week visiting paper mills whose product they sell. They visited the Nekoosa-Edwards Company plant at Nekoosa and Port Edwards and then went to Mosinee and Green Bay. The visitors were entertained at all the mills they visited.

Paper mill interests at Wausau and Brokaw are reported to have secured an order from the Wisconsin Railroad commission compelling the Tomahawk and Western Railway Company, a shortline road, to continue operation and reduce its rates. This road runs into the extensive spruce and hemlock forests in Lincoln county. About three years ago the railroad company announced it would cease operations but the railroad commission ordered it to continue. A little later it increased its rates from 150 to 170 per cent and again the paper mills objected, and after a hearing a reduction was ordered. The spur line is of considerable importance because it is a connecting link between two other railroads and because it taps the spruce and hemlock forests.

Freight Rates on Paper From Kalamazoo Reduced

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 31, 1922—A freight rate victory that will mean thousands of dollars annually to the paper mills of the Kalamazoo valley district and place these concerns on an equitable footing with competitors in various parts of the country, has just been won through the efforts of the association's traffic bureau, managed by F. A. Larish.

As a result of a recent hearing in Washington, D. C., the Interstate Commerce Commission has ordered a reduction in rate on book and printing paper from Kalamazoo to Chicago and Joliet, from 18 to 15 cents per 100 pounds, carloads. Announcement of this decision was made by Clarence A. Bradford, vice president of the Rex Paper Company and secretary of the association.

This is a saving on freight of 60 cents a ton and as Kalamazoo valley mills ship annually thousands of carloads of paper to Chicago and western points the total will run into big figures.

In addition to this case, Traffic Manager Larish has also started proceedings to gain further advantages and concessions.

The I. C. C. ruling is that the new rate must go into effect no later than August 26.

In addition to this case, Mr. Larish has recently started proceedings before the commission, seeking to gain further concessions and adjustments.

Vortex

Reg. U.S. Pat. Off.

Drinking Cups

For Bigger Sales at Better Profits

Points of Excellence

Made of clean, strong, pure white paper.

Perfectly sterilized. Meet requirements of Pure Food and other existing Laws.

Outside reinforced with pure, fully refined paraffin wax. Strong and rigid.

No wax on inside. Tasteless and odorless.

No glue. Sealed with paraffin under pressure.

Spiral wrapping reinforces cup.

Extra reinforcement at bottom prevents cups sticking together.

Will not absorb moisture or leak when left for an indefinite period.

Conveniently shaped; no holders needed.

Packed in dustproof cardboard tubes; shipped in sealed cartons.

Nested together and dispensed inverted, inside untouched by hands.

YOU can sell more Vortex cups. You can sell them easier. You can sell them at a better profit.

These are strong statements, but they represent the true situation in regard to this leader in the drinking cup field.

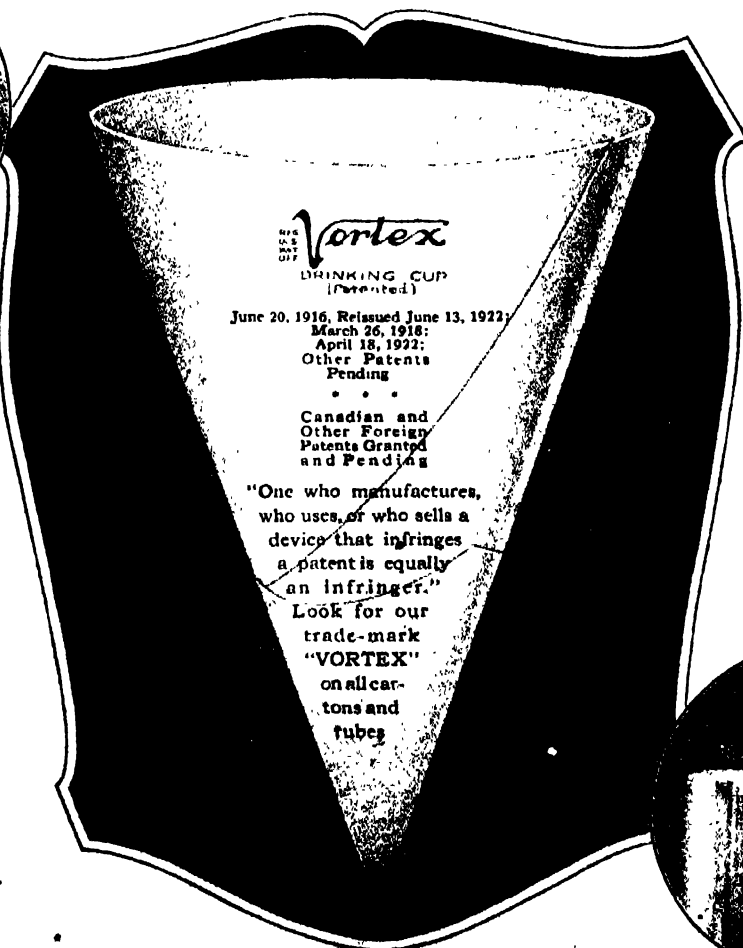
It is a popular cup. It has features which make it the favorite wherever it has been introduced. Besides, it is the

most economical cup because of its patented features of design and construction, and on account of manufacturing economies effected by our millions-a-day production.

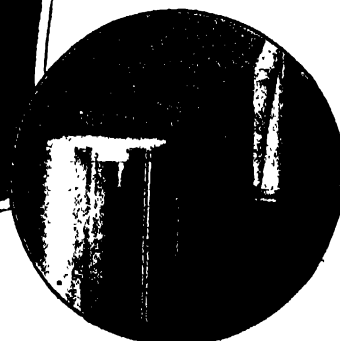
Get the whole story on the Vortex. Our proposition opens up the biggest opportunity for profitable activity in the drinking cup field. Get all the facts. See for yourself.

THE VORTEX MFG. CO., 421-431 N. Western Ave., Chicago

Canadian Wm. A. Rogers, Ltd., Toronto, Manufacturers and Distributors for Canada



THE Dispenser may be utilized in two ways—either for attachment to post or wall—or to be placed on top of cooler, at the user's option. Its simplicity, fine appearance and low cost please your customers.



TORONTO PAPER MARKET SHOWS SUMMER QUIETUDE

Orders for Paper Have Shown an Actual Slump Recently, Although It Is Believed That This Condition Is Only of a Temporary Nature—Business, However, is Not Expected to Ease Off So Greatly This Year As It Usually Does During the Summer Months—Canadian Paper Mills Said to Be Doing an Extensive Export Business with Australia—Inquiries Are Unusually Numerous.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 31, 1922.—With the exception of news print and possibly book papers the paper trade in Ontario may be said to be passing through the doldrums. The past week has shown a distinct lull in many lines of paper and jobbers say business is extremely hard to get. The printing trade is decidedly quiet with many of the plants running short hours and with reduced staffs. This has reflected itself in an actual slump in paper orders although it is believed that the condition is only of a temporary nature. Although the book paper distributors report quiet selling conditions, the fact remains that the manufacturing end of the business is fairly busy and most of the mills have orders booked ahead. This is taken to indicate that there is excellent business ahead although jobbers and consumers are not absorbing large amounts. On the other hand the publishing business appears to be keeping the book paper mills fairly busy. Conditions are fairly good among the distributors of wrapping papers, kraft, manilas, bonds and writings although it must be said that the past week has shown a falling off in orders. Some are inclined to assign as a reason for the slump the unsettled condition caused by the railway and coal strikes. General activity in paper manufacturing circles is expected to slacken this month now that the inventory period is approaching and some of the mills are preparing to close down now for a period of stock-taking and repairs. As the summer wears on the belief of many in the trade that the industry will not be characterized by the customary easing off of demand of a protracted period during the hot weather months to as pronounced a degree as in former years is seemingly being borne out and it is the general opinion in the paper trade that the industry will be favored with a fair market during the next several months in Canada, when as a rule there is a marked slowing down. The past week of quietude in the paper business in Toronto and district is believed to be no more than a temporary lull which may pass at any time.

Canadian Mills Doing Business With Australia

Canadian paper mills are doing an extensive export business with Australia. W. A. Boucher, managing director of Spedding, Limited, Auckland, New Zealand, who was in Toronto and other centres during the past few days, securing agencies for paper and other commodities, expressed the opinion that there were immense opportunities in New Zealand and Australia for Canadian paper provided they were ready to fight the keen competition which prevails. Enquiries from Australia are unusually numerous just now. Canadian paper companies have shipped considerable quantities of news print, writings and printings, notwithstanding that as compared with Great Britain, this country is under a stiff handicap in the way of duty. It is hoped that under the many protests against this unfair discrimination the Australian Government will shortly remove the handicap.

Plans for Kaministiquia Mill

Doubling the capacity of their ground wood pulp mill from thirty tons daily to sixty tons; building and equipping a newsprint mill with a daily capacity of fifty tons at an estimated cost of \$1,000,000; the purchase of 7,000,000 additional electrical horse-

power, are some of the items to be undertaken by the Consolidated Water Power and Paper Company of Wisconsin, in connection with the Kaministiquia Pulp Mill in Port Arthur, Ont., purchased recently by that company. Announcement was made this week of the contemplated expansion and has caused quite a stir in Canadian pulp and paper circles.

Dryden Paper Co. Expansion

The Dryden Paper Company, Limited, of Dryden, Ont., has inaugurated a big program of expansion which it hopes to have completed by the first of the year with a view to doubling its production of wrapping and other papers. The company is developing a further 1,000 h. p. electric power and is extending the paper plant. A groundwood mill is also being installed and when the additions are completed the company will be in a position to produce machine finished and machine glazed krafts, minilas, fiber and light weight papers. The extension to the beater room will be a two-story brick and concrete structure 120 feet long by 90 feet wide. The new machine room will be 210 feet long by 80 feet wide and the new extension to the finishing room 140 feet long by 80 feet wide. The train shed for shipping will be 140 feet long by 40 feet wide. A Yankee paper machine which will trim 120 inches is also being installed.

General News of the Trade

Richard Crawford, of the Industrial Relations Department of the Spanish River Pulp and Paper Mills, Limited, lies in the general hospital at Sault Ste. Marie, Ont., with serious injuries as a result of colliding with an automobile while riding his bicycle. He was dragged 52 feet by the car.

At Iroquois Falls, Ont., work is already well under way on the new slasher No. 3 of the Abitibi Power and Paper Company. No. 3, which is being erected west of the saw mill, will be a duplicate of Nos. 1 and 2. It will have five saws and a capacity of 1,200 cords a day. This slasher is to handle the 16-foot wood brought in along the new railway, which is just being built, and will be ready for operation by October 1. There will be a railway spur cutting off the main track just south of the saw mill and running up to the new jackladder where the wood will be dumped. The wood will go up the jackladder and will be dumped into conveyor "B," which connects with No. 6 and goes straight to the wood room.

The new warehouse building which has been under construction by the Barber-Ellis Company at 384 Adelaide Street, West, Toronto, during the past five months, has now been completed. The company is now handling a lot of its envelopes and manufactured stationery from its new building, which is a handsome structure.

William Gorman, Montreal representative of the Provincial Paper Mills, Limited, Toronto, has gone on an extended visit to Scotland in order to recuperate after a rather lengthy illness. Arthur Jewitt, formerly of the Toronto sales staff, has been moved to the Montreal office.

E. C. Martin, representing the Interlake Tissue Mills, Merriton, Ont., has returned from a trip to British Columbia, studying paper trade conditions en route. Mr. Martin reports business in a healthy condition throughout the West as far as paper products go.

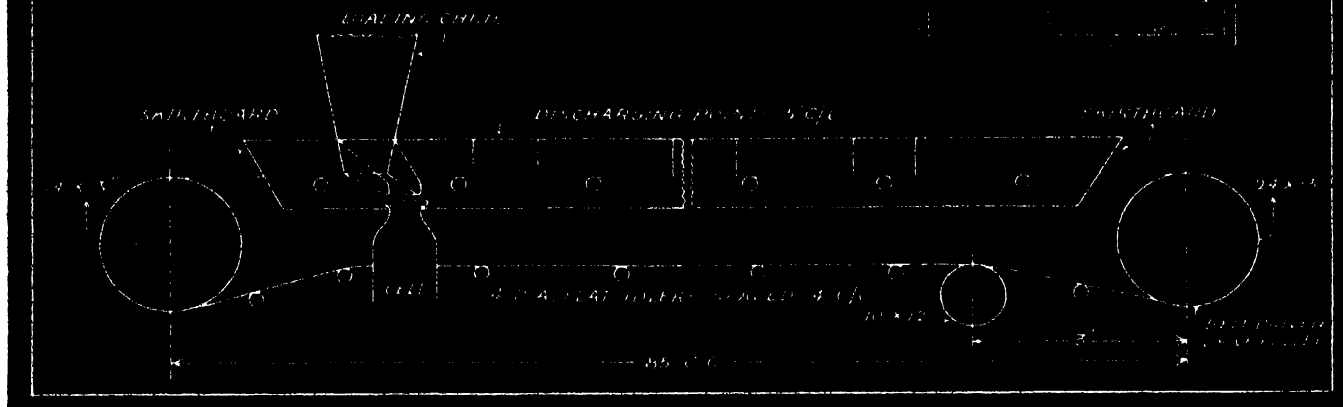
R. Currie, general manager of the Dominion Paper Company, Montreal, has been spending his vacation in Ontario, making his headquarters in Toronto.

W. H. Sherriff, of the Wayagamack Paper Company, is spending a few days at the mill.

This week's *Ontario Gazette* announces the incorporation of the Abitibi Transportation and Navigation Company, which is to build a logging railway for the Abitibi Power and Paper Company. This is the result of the settlement of the dispute between the latter company and the Temiskaming and Northern Ontario Railway over franchise rights in the Iroquois Falls section. Objection was made to the T. & N. O. that the new company sought to carry general freight.

SPECIFIED: SPECIAL GOODYEAR CONVEYOR BELT

180-12" 5-PLY - 16" COVER
MATERIAL: COSSUTIES (SLICED SUGAR BEETS)
SPEED: 251 FT. PER MINUTE
AMOUNT OF MATERIAL CARRIED TO DATE: 98,500 TONS
INDEPENDENT SUGAR COMPANY
MARINE CITY, MICH.



Blueprint sketch and insert photograph of G. T. M. specified Goodyear Conveyor Belt in service in the plant of The Independent Sugar Company, Marine City, Michigan

Copyright 1922, by The Goodyear Tire & Rubber Co., Inc.

The Sugar-Beet Acids—and the G. T. M.

"*This is the belt we were looking for from the day we opened the plant,*" said the Superintendent of the Independent Sugar Company, Marine City, Michigan. He was referring to the Goodyear Conveyor Belt specified by the G. T. M.—Goodyear Technical Man—after an expert analysis of the Company's service requirements.

"*It satisfies us thoroughly,*" is the final verdict. "It has served through two successful campaigns since October, 1920, is in splendid condition today, and, judging from its appearance, should last five more campaigns. It has withstood the destructive action of beet juices, has been easy to keep clean, and shows little sign of wear. We wish that every sugar man could know how our belt troubles have been so completely solved."

The acids in beet juices make short work of ordinary conveyor belts. The Independent Sugar Company spared no money trying to find belting that would resist these acids and withstand the heavy edge wear developed in this type of conveying. The belting problem was costing them time and money, not only in frequent replacements, but also in frequent interruptions in the work of the entire plant.

When the G. T. M. stepped into the office of

the company, late in the summer of 1920, he found a chair and a welcome waiting for him. They had heard of the G. T. M. The G. T. M.'s business was to hear about belt troubles.

Together, they went over every point in the problem. They fitted together the practical knowledge of the Company's officials with their own conditions of service, and the G. T. M.'s expert knowledge of belting. The result was the G. T. M.'s recommendation of a special Goodyear Conveyor Belt, 180 feet long, 12 inches wide, 5-ply in thickness, with 1-16 inch cover.

How it has served efficiently and economically has been told in the plant superintendent's own words. In its first 100-day campaign, it carried 50,647 tons of sliced beets; in the second, 47,890 tons. It is exposed to year-round weather conditions in a variable climate, and in winter carries tons of frozen beets. It has resisted edge wear.

You can rely on the G. T. M.'s analysis and his recommendation of powerful, trouble-free and long-wearing Goodyear Belts. To get in touch with the G. T. M., or for further information about Goodyear Belts, Hose, Packing, and other mechanical goods, write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR

CHICAGO MARKET UNSETTLED BY THE STRIKE SITUATION

Paper Men Carefully Watch Railroad and Coal Strike Which, It Is Believed, May Lead to Important Changes Within the Next Few Days—Except for the Influence of this Labor Trouble, the Paper Situation Is Satisfactory and the Outlook Encouraging—Chicago Salesmen Invite Paper Men to Meet With Them for Luncheon Each Monday at Noon at Old Colony Club.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, July 29, 1922.—The strike situations during the past week have had direct results on the paper market and it is expected by most paper officials that within the next few days more radical changes will take place.

During the last several days many of the paper manufacturers have withdrawn prices and at the present time are not being quoted. It is the general intimation by officials in Chicago offices that the coal consumption will last but ten days at the very longest. Nearly every mill has been working up to its fullest capacity and in doing this it was also utilizing every ounce of coal energy that could possibly be utilized.

The paper trade in general has been satisfied with its future business horizon but is eagerly watching and patiently waiting for some definite settlement of the strikes.

Prices on waste paper which have been high are again lowering to somewhat of a more normal figure. Buyers at the present time are not so evident in the waste paper market, but this condition is due most likely to unstable conditions in all other lines of paper and wood pulp.

Chicago Salesmen Meet at Old Colony Club

Chicago is fortunate enough to have one of the most vital organizations in the Middle West that deals with the paper industry in general. The Chicago branch of paper salesmen have formed an association that meets in the old Colony Club, La Salle Hotel, on the eighteenth floor, every Monday at 12:30. Here is the opportunity for anyone who is interested in the paper industry to get first hand news.

All paper men who happen to be in Chicago, salesmen or otherwise, are invited to attend these meetings and help discuss all of the important topics of the day. The club has been active and generous, sending out notices to the salesmen throughout the Middle West inviting them to attend their informal discussions.

The club, though meeting weekly, has not been established on a permanent basis. One of the other important features of this club is that of reliable statistical information that is looked forward to with interest at every meeting.

A new \$400,000 building to be erected for the Swigert Paper Company, is now being started at 713-23 South Wells street. The foundation now being laid is 93 by 102 feet. It will be a ten-story building, three stories will have granite and cut limestone exterior and the remaining stories of the building will be of brick and stone trim. High speed electric elevators will be an added feature to the building and it has been announced by the Swigert Company that it will occupy five of the floors for its own use. The consideration for the land upon which this property is being built was estimated at \$74,000 and is contiguous to the Empire Paper Company plant.

Fall Conference, October 17

The fall conference of the Paper and Pulp Association will be held the week beginning October 17, at the Drake Hotel, Chicago. The big paper salesman day is to be Tuesday, and is expected to be one of the big events of the year in the paper industry.

Speakers with national fame have been engaged to be on hand to help gain the impetus of important discussions of many pertinent topics of the day. Announcement of the names of the speakers will be made later.

General News of the Trade

R. H. Butterworth, Champion Coated Paper Company, West Washington street, left the city to spend several days at the company's mills at Hamilton, Ohio. Mr. Butterworth left Chicago on Tuesday, July 25, and expected to return about Saturday.

R. S. Hoffman, of the R. S. Hoffman Company, Baldwinsville, N. Y., is spending a few days in Chicago calling on his friends and the trade here.

T. J. Leahy, executive head of the La Salle Paper Company and also of the Chicago Gummer Tape Company, is on a month's vacation in northern Wisconsin. He expected to be back in the city some time in August.

T. M. Johnson has succeeded C. I. Forbes in the managership of the Old Mill Paper Products Company, 1018 South Wabash avenue. This change was made recently. Mr. Forbes has returned to the east to be identified with the firm there.

A. N. Forsythe and J. J. Forsythe, of the Forsythe Paper Company, 10 S. La Salle street, left Tuesday, July 26, to spend several days at the company's mills at Chillicothe. They returned to the city Saturday, July 29.

Calling at the greater number of offices dealing in paper one finds that the majority of the officials have left to view business conditions at the mills. From other office members there comes a sort of suggestion that conditions are somewhat unstable at the mills and the future is to be determined by the officials who at the present time are at the mills.

May Dismiss Misbranding Cases

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 2, 1922.—It is understood that the Federal Trade Commission is now considering the advisability of dismissing a number of formal complaints which it issued some time ago in connection with misbranding.

Within the past few days the Commission has dismissed thirty-eight cases against firms for resale price maintenance with the understanding that further investigations will be made in the cases. These dismissals were made in spite of the fact that the United States Supreme Court upheld the Trade Commission in the Beechnut case dealing with resale price maintenance.

The cases of misbranding would naturally follow the resale price maintenance dismissals as a precedent. The United States Supreme Court also upheld the Trade Commission in its decision on misbranding in the case of the Winsted Hosiery Company. It is to be assumed that if the Commission decides to dismiss its misbranding cases that it will still insist upon further investigations into these particular cases.

Ask Receiver for Prince Rupert Paper Co.

VANCOUVER, B. C., July 24, 1922.—Legal proceedings have been entered here on behalf of the J. S. Emmerson estate looking to foreclosure on the assets of the Prince Rupert Pulp and Paper Company, for themselves and other holders of first mortgage bond totaling \$800,000. The plaintiffs ask the appointment of a receiver for the company, which is alleged to have defaulted in payment of interest this year. The Montreal Trust Company, as second mortgage bondholders, are named as co-defendants.

A. F. Sutherland, of Vancouver, and George W. Gay, of Texas are the only directors still holding office in the firm. Its annual meeting called for last Wednesday was adjourned for lack of attendance, and no officers could be elected for the company.

**GROUND WOOD
CHEMICAL PULPS**

PERKINS-GOODWIN CO.
NEW YORK

PAPER

ALFRED LEEDS, President
KARL BECKER, Vice President

ERNEST R. COLLINS, Secretary
EDWARD M. MILLER, Treasurer

Becker Paper Corporation

350 Madison Ave., New York, N. Y.

317 Main Street, Springfield, Mass., Branch Office for New England States.

Dealers in All Grades of Paper

SPECIALISTS IN

**BOOK PAPER, GLASSINE and EMBOSSED
GLASSINE PAPERS**

Exclusive Distributors for

**WESTFIELD RIVER PAPER COMPANY
RUSSELL, MASS.**

Obituary

Leon Gottheil

Coming as a distinct shock to the paper stock trade was the sudden and unexpected death of Leon Gottheil, of Castle, Gottheil & Overton, importers of paper making material and burlap, of 200 Fifth avenue, New York. Mr. Gottheil had planned to sail on his periodical business trip to Europe the Saturday before his death, but due to his poor health he decided to enter Mount Sinai Hospital, anticipating that a complete rest would fit him for his voyage abroad. Friends and relatives, having no idea of the seriousness of Mr. Gottheil's condition, had no warning until late Saturday afternoon when he was said to be sinking rapidly. He died about 4:00 o'clock Sunday afternoon, funeral services being held in the Chapel at Salem Field Cemetery.

Mr. Gottheil was born in Germany on July 11, 1860. He entered the waste material trade while a young man in Berlin, where he remained for several years learning the first rudiments of the business with the firm of Lewy and Strich, and afterward went to Ghent, Belgium, where he was connected with Edmund Lausenbergh & Company. He came to New York in the late eighties, and after serving as the sales representative of the European concern he was connected with prior to his crossing the Atlantic, he formed a partnership with William A. Castle on January 1, 1894, to deal in and import wood pulp, rags and other papermaking materials. In October, 1901, Frank C. Overton, then with R. H. Overton & Son, joined the firm, R. H. Overton & Son being liquidated, and the firm name was changed to Castle, Gottheil and Overton, which has since been operating and which, largely to the credit of Mr. Gottheil, has grown to be among the foremost paper stock concerns in the United States.

Mr. Gottheil had traveled extensively in various parts of the world, and had for years made one or more trips annually to Europe in the interests of his firm. He was an accomplished linguist, speaking several languages fluently and was widely known throughout the rag and paper stock trade in European countries. He was a former president of the Association of American Wood Pulp Importers.

Theodore R. Adams

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., July 31, 1922.—Theodore R. Adams, night superintendent of the International Paper Company at Piercefield, was drowned last week in the Racquette River at a point near the mouth of Dead Creek opposite Lost Channel. His companion, an employee of the mill, Neil Benware, saved his own life by a narrow margin. Frank B. Hoegstrom and Walter Harris, officers of the company, succeeded in recovering the body with grappling irons the following day.

Mr. Adams and Mr. Benware started out on a fishing trip. They got lost on the return journey and were forced to camp out all night. The next morning they reached the river and, although the stream was 150 feet wide and the current was swift, they started to swim across. Adams went under to his death while Mr. Benware reached the shore after going under once. Recovering from exhaustion he hastened to Piercefield and reported the accident.

Mr. Adams went to Piercefield from Maryland and was a very successful paper maker. He was very well liked by officers and employees alike. He is survived by a widow and a daughter eleven years of age. He was 36 years old.

Mrs. Maurice Costello

DAYTON, Ohio, July 31, 1922.—Mrs. Maurice Costello, wife of M. Costello, former owner of the Peerless paper mills in North Dayton and for many years a member of the firm of Nixon & Costello, manufacturers of bottle wrappers and kindred lines, died at her

home, 401 Salem avenue, Dayton View, last Sunday morning and was buried from St. Joseph's church last Tuesday.

Mrs. Costello was stricken with paralysis three weeks ago. Prior to that time she had enjoyed excellent health. On June 9 of this year Mr. and Mrs. Costello had celebrated their golden wedding anniversary and were surrounded by their children and many friends.

Mrs. Costello was born in County Kerry, Ireland, and came to the U. S. when but 10 years of age, soon thereafter settling in Dayton. She was a woman of splendid qualities of mind and heart and reared a family of sons and daughters who became well known in business and social circles.

Surviving are the husband who still is head of the Nixon & Costello company and other concerns; two sons, Michael and Robert and four daughters, Mrs. E. A. Flaherty, Mrs. Peter Kuntz, Mrs. Thomas F. Larkin; and Miss Helen Costello; and two sisters, the Misses Johanna and Mary Sheehy.—T. J. W.

To Formulate Pulpwood Standards

[FROM OUR REGULAR CORRESPONDENT]

UTICA, N. Y., August 1, 1922.—The Woodlands Section of the American Paper and Pulp Association has issued a call for a meeting at Utica on Tuesday, August 15, of New York state pulp manufacturers who buy pulpwood, to formulate standards for the contracting for New York wood. The proposal under consideration will be the advisability of developing standard specifications to govern the purchase and sale of pulpwood for New York mills, and the employment of official check scalers for the purpose of settling possible disputes between buyers and sellers of pulpwood.

If the present plan is carried out, suggestions will be formulated for three grades of pulpwood, and these will be submitted to individual New York state mills for further consideration, and action at a later meeting.

Similar meetings are proposed in other states where pulp is manufactured. C. W. Hurtubis of the Hamnermill Company of Erie, Pa., chairman of the Woodlands Section, is chairman of the general committee. O. M. Porter, formerly of the faculty of the New York State College of Forestry, now secretary of the Woodlands Section, is secretary of the general pulpwood committee, and is handling the plans for the New York meeting.

A New York state forester, K. A. Swenning, graduate of the State Forestry School at Syracuse, who has been doing some excellent development work in the Ohio River Valley in reforestation of poplar for the paper industry, is the Ohio member of the general committee.

American Writing to Show Baby Machine

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 24, 1922.—The American Writing Paper Company of this city is planning to send a carload of display material to the second Educational Graphic Arts exposition, which will be held in Mechanics Building at Boston from August 28 to September 2. Among the exhibits will be the "baby" Foundinier paper-making machine, the smallest device of its kind in the world. This machine only tips the scales at 500 pounds and takes up the room of two library tables set lengthwise. A complete chemical laboratory will also be exhibited.

May Import Pulp Through Portland

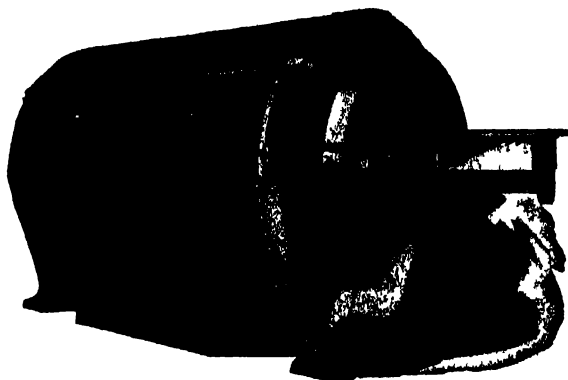
[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Me., August 1, 1922.—Three New York firms that import large quantities of pulp have been looking up facilities to ship through Portland. Should storage facilities be found here it is probable that the shipments of pulp might extend over a period of three or four months each year and the number of steamers coming here with cargoes from Scandinavian countries would be sufficiently large to provide many longshoremen with considerable work.

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low
Power
and
Upkeep Expense



Delivers
Rejections Free
from Good
Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING
WRITE FOR FULL DETAILS *CORRESPONDENCE A PLEASURE*

IMPROVED PAPER MACHINERY CO. **Nashua, N. H.**
SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

WHALEN SULPHITE PULPS

Made from the SITKA SPRUCE of BRITISH COLUMBIA
Noted for Fibre, Color and Strength

**SNOWWHITE
BLEACHED
SULPHITE**

**GLACIER
EASY BLEACHING
SULPHITE**

**SWAN
STRONG
SULPHITE**

As exclusive Sales Agents for all of the products of the WHALEN PULP & PAPER MILLS, LTD., in addition to stocks at the mills, we will carry large stocks of the above well-known brands in New York, thus insuring prompt deliveries.

Your inquiries addressed to any of our offices will bring prompt quotations by wire.

CANADIAN ROBERT DOLLAR CO., Limited
VANCOUVER, B. C.

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Robert Dollar Co., 15 Moore Street, New York, N. Y.
Robert Dollar Co., Harris Trust Bldg., Chicago, Ill.
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Robert Dollar Co.,
Shanghai, Hong Kong,
Hankow, Tientsin,
Ichang, Chungking, and
Pekin, China; Kobe,
Japan; Calcutta, India;
Manila, P. I.; Singapore,
S. S.

New York Trade Jottings

The American Paper and Pulp Association, 18 E. 41st street, New York, is beginning to make preparations for the Fall Conference, to be held the week of October 16.

John Matthews, Jr., the new Chief of the Paper Division at Washington, was in New York last week preparatory to the assumption of his duties beginning August 1.

W. J. Raybold, of the B. D. Rising Paper Company, Housatonic, Mass., and president of the American Paper and Pulp Association, was among the New York trade visitors of the past week.

O. M. Porter, secretary-treasurer of the Woodlands Section of the American Paper and Pulp Association, is attending the Babson Industrial Conference at Wellesley Hills, near Boston, Mass.

M. M. Hoosack, recently connected with Fred H. Luning of New York, is now associated with Thomas Barrett & Son, 500 Broome street, New York, as a member of their paper stock department.

The New York *Tribune* and New York *American* lost news print stocks valued at \$135,000 in last week's million dollar fire, destroying the Manufacturers' Transit Company's warehouse in Jane street, New York.

The New York office of Crane & Co., of Dalton, Mass., D. W. I. Mulford, representative, has removed from 280 Broadway to Room 1716 in the Woolworth Bldg., 233 Broadway. The new phone number is Barclay 4954.

Phillip T. Dodge, president, and Allen Curtis, vice-president of the International Paper Company, 30 Broad street, sailed for Europe Tuesday of this week on the *Aquitania*, to make a general survey of European paper conditions.

Vernon Brothers & Co., of 66-68 Duane street, New York, have just issued a price list which applies for the current month. The list has been comprehensively prepared, the text is simple and it is bound with a cover of unusually attractive design.

Baldwin Paper Mills, Inc., with offices at 261 Broadway, New York, have recently installed three new telephones, Barclay 980-981-3183. Increased business has also necessitated the recent addition of two experienced men to their sales force.

Eaton, Crane & Pike Company, of Pittsfield, Mass., has recently opened a warehouse in New York at 139-141 Franklin street. Expansion of the company's business made it necessary to provide this additional space, five times as large as its previous stock rooms.

The R & R Loose Leaf Company has recently been incorporated with offices at 46 Beekman street, New York. J. L. Rosenberg and Max Reich, who have formed a partnership, will specialize in the handling of binders and loose leaf indices for the trade only.

Additional postal cards have been received from Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, stating that during his entire stay in Norway it rained incessantly. Dr. Baker is now investigating mill conditions in Germany.

De Zego Bros., Inc., dealers in waste paper, of 307 Walter street, New York, recently filed a petition in bankruptcy listing liabilities at \$15,905 and assets at \$3,789. Among the principal creditors is

the Bogota Paper and Board Company, whose claim of \$2,600 is secured.

H. Gardner McKerrow, for the past three years advertising manager for the National Aniline & Chemical Company, Inc., has resigned. He will engage in business for himself in New York, specializing on paper and chemical matters as advertising and merchandizing consultant.

The Wall-Paper Manufacturers' Association is now holding its annual convention at the Hotel Commodore, July 31-August 5. The Wall Paper Travelers' Association and the National Wall Paper Wholesalers' Association are also holding meetings this week, members only being admitted. The general Association banquet was Monday night of this week, July 31.

A. Katzenstein, president of Katzenstein & Keene, Inc., sailed for Europe on July 29, to make a three months' business trip through Great Britain, France, Holland, Spain, Germany and Italy. Mr. Katzenstein, who is a linguist, arrived from Europe last June, after a nine months' stay abroad. Joseph F. Keene, treasurer, who is also well-known in the trade, is acting as manager.

John McCluskey Leaves Piercefield Mill

[FROM OUR REGULAR CORRESPONDENT]

PIERCEFIELD, N. Y., August 1, 1922.—After completing more than 25 years of continuous service for the International Paper Company, John McCluskey has resigned and moved to a farm recently purchased near Lakewood, N. J.

For the past ten years Mr. McCluskey has been employed as superintendent of the ground wood department at the Piercefield Mill under Manager M. O. Wood.

Mr. McCluskey has been a most faithful and efficient foreman, and an expert in the manufacture of ground wood. In leaving the Piercefield mill Mr. McCluskey takes with him the friendship and goodwill of the entire organization.

At a smoker arranged in his honor before his departure a handsome gold watch and chain was presented to Mr. McCluskey by Mr. Wood in behalf of all Mr. McCluskey's friends as a token of their esteem and a reminder of the pleasant relations existing in the long period of his service in the mill.

James Clements, night foreman at Piercefield, who has been in the Company's service for 23 years succeeds Mr. McCluskey.

Receiver To Carry on Niagara Wall Board Co.

BUFFALO, N. Y. July 31, 1922.—Business of Niagara Wall Board Company will be continued under management of William W. Reilley, recently appointed receiver by Federal Judge John R. Hazel. The receivership is designed to keep assets intact until the firm shall have had an opportunity to adjust affairs.

The company's executive offices are in Buffalo. Two factories, are located at Penn Yan. The receivership action was a friendly one, in which Graselli Chemical Co., Cleveland, is complainant. Assets are represented as totaling more than \$700,000, with liabilities of \$175,000, of which \$100,000 is for a mortgage.

Millers Falls Paper Co. Electrifies Plant

[FROM OUR REGULAR CORRESPONDENT]

TURNERS FALLS, Mass., July 31, 1922.—The entire plant of the Millers Falls Paper Company is being electrified. Every machine in the plant will be driven by separate motors and the coal driven power plant of the company will be abolished. There has been no lack of orders at the Millers Falls company's plant and it is one of the most prosperous of the paper manufacturing establishments in the country.



Paper Mill Bulletin No. 1

In the Paper Industry

**Farrel Calenders
Farrel Rolls
and
Farrel Roll Grinders**

—have always received
preference wherever the
reputation of a Paper
Mill depends upon high
quality of product

FIGURE it out—

How much does it cost you to have
your Rolls reground when you include—

The charge for regrinding?

Loss on poor quality of production?

The shipping charges?

And the time you lose while the Roll is
away from your Plant?

How many Rolls must you have reground
each year?

How much does this amount to as a
yearly total?

It would be interesting to investigate
the matter—may we send you details of
the Farrel Roll Grinding Machine?

FARREL

Established 1848

**FOUNDRY & MACHINE COMPANY
ANSONIA, CONN.**

Branch Office

802 Sweetland Bldg., Cleveland, Ohio

Branch Plant

Buffalo, N.Y.



Why big Executives in 46 countries do business with Lubrication Headquarters:

THE BIG EXECUTIVE thinks in big terms. He plans for big results. He prefers to deal with big business people.

Big industrial executives the world over recognize the Vacuum Oil Company as Lubrication Headquarters for the following reasons: It has—

BIGNESS—plus 56 years of specialization in selecting crude oils *solely for their lubricating values—and not for their value as gasoline producers.*

BIGNESS—plus specialized knowledge which enables this Company to manufacture and distribute direct

from its refineries lubricating oils to meet every lubricating need in 46 countries.

BIGNESS—plus technical and practical experience which gives scientific accuracy and weight to every Vacuum Oil lubrication recommendation.

BIGNESS—plus ability to prescribe Correct Lubrication and thereby reduce every form of metal-to-metal friction and to insure outstanding operating economies—a result uppermost in the mind of any plant executive who “sees red” when he has to look at red ink figures.

VACUUM OIL COMPANY

THE FIRST STEP towards securing the full economies of Correct Lubrication is to have on your desk a Lubrication Audit of your own plant. We will gladly arrange to make such an Audit upon request and without charge. See details in the column below.

The day you see and act upon the facts brought out in your Lubrication Audit will be a new day for economy in your plant.

The Lubrication Audit

Explained Step by Step in Condensed Outline

INSPECTION: A thoroughly experienced Vacuum Oil Company representative in co-operation with your plant engineer or superintendent makes a careful survey and record of your mechanical equipment and operating conditions.

RECOMMENDATIONS: We later specify, in a written report, the correct oil and correct application of the oil for the efficient and economical operation of each engine and machine. This report is based on —

- (1) The inspection of the machines in your plant.

- (2) Your operating conditions.
- (3) Our 56 years of lubricating experience with all types of mechanical equipment under all kinds of operating conditions throughout the world.

- (4) Our outstanding experience in manufacturing oils for every lubricating need.

CHECKING: If, following our recommendations in this audit, you install our oils, periodical calls will be made to check up the continuance of the desired results.

FOR THE ABOVE FREE SERVICE address our nearest branch office.

Domestic Branches:

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(Main Office)
Detroit
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Pittsburgh
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Indianapolis
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Kansas City, Kan.

Philadelphia
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Albany



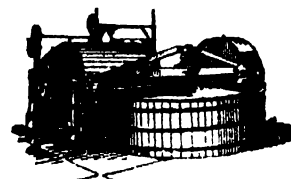
Lubricating Oils

A grade for each type of service

VACUUM OIL COMPANY

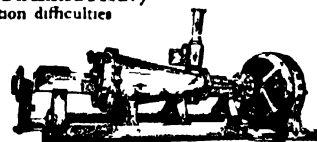
A Lubrication Audit

In the Paper Industry would point out the Correct Lubrication for the important machines as follows:



Beaters

Beater bearings, generally unnecessarily hot, will run cooler if the stock leakage is eliminated and oiling is regularly attended to. The regular use of Gargoyle D. T. E. Oil Extra Heavy overcomes beater lubrication difficulties.



Jordans

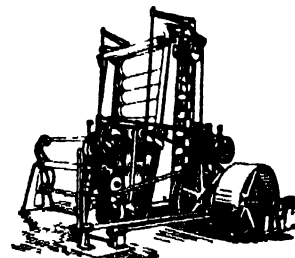
Because of the high speeds and heavy pressures which are always present, and the side pull on bearings when belt driven, it is necessary to use a heavy bodied oil. For this purpose we recommend Gargoyle Etna Oil Heavy Medium.

Paper Machines



For bearings of the paper machine, subjected to induced heat from steam used for drying, an extra heavy bodied oil is required such as Gargoyle D. T. E. Oil Extra Heavy.

The rolls at the wet end subjected to moisture and heavy pressure demand a compounded oil which will resist the washing tendency and maintain a perfect oil film. We recommend Gargoyle D. T. E. Oil Heavy X for these specially trying conditions.



Calenders

Paper machine production is directly dependent upon uniform speed. Calender bearings are subjected to heavy pressures and high frictional heat. The regular application of Gargoyle D. T. E. Oil Extra Heavy insures uniform speed, and consequently minimizes "breaks".

E d i t o r i a l

Vol. LXXV New York, August 3, 1922 No. 5
FIFTY-FIRST YEAR

The Paper Bids

The Government Printing Office has tried an unusual experiment this year in calling for bids for paper for the six months' period beginning with September 1. As is well known it has been the custom for a long number of years past to call about the latter part of January for bids for the full year period beginning March 1. This custom, however, was changed somewhat several years ago when the market began to decline after the boom and bids were asked for both the full year and six months periods and even under this new method of bidding the first bids in 1921 were all rejected and after the rebidding awards were not made in many cases but much of the paper was bought on the open market. This year again when the bids were opened for the first six months of the year numerous bids were altogether rejected on certain varieties of paper as they apparently were too high.

In the present instance only eighteen bids were received. This is not surprising when the circumstances that have surrounded the handling of the bids by the Government Printing Office of late is considered and probably may be taken to indicate also that paper men are convinced that there will be a much better paper market within the next few months than there has been in some time past. Some of the lowest bids this year as compared with the prices at which awards were made six months ago and last year furnish an interesting index of how paper prices are tending. They show that the decline in paper prices has been definitely checked and that the tendency of prices is again upwards.

The lowest bid in the present bidding on white news print was made by Dobler & Mudge at 4.3 cents. This item was awarded to the same concern for the first six months at 3.79 cents and was awarded to the same concern in 1921 at 5.48 cents.

On No. 1 machine finished printing the lowest bidder in the current bids was Dobler & Mudge at 6.47 cents. This item was awarded six months ago to the International Paper Company at 6.63 cents and was awarded in 1921 to the American Writing Paper Company at 9.25 cents.

On rag finished printing no bids at all were submitted on any of the varieties. Rag finish printing 25 x 38—40 cut 32 x 48 flat was awarded six months ago to the Bryant Paper Company at 7.54 cents and the same item was awarded in 1921 to the American Writing Paper Company at 10.09 cents.

On sized and super-calendered printing paper 25 x 38—45 cut 24 x 32 and 32 x 48 Dobler & Mudge in the current bids were low at 6.97 cents. This item six months ago was awarded to the Kalamazoo Paper Company at 6.58 cents and was awarded last year to the same concern at 8.34 cents.

On half-tone printing paper, 25 x 38—70, cut 24 x 38 and 38 x 48, Dobler & Mudge in the current bidding were low at 6.22

cents. Six months ago the item was awarded to the same concern at 5.97 cents. In 1921 it was awarded to the Kalamazoo Paper Company at 8.37 cents.

On single coated both sides book, 25 x 38—70, cut any size, flat, maximum width 42 inches, the only bidder was Dobler & Mudge at 8.49 cents. This item was awarded six months ago to the Allied Paper Mills at 8.09 and was awarded in 1921 to the Whitaker Paper Company at 11.37 cents.

On white writing paper No. 16, the Aetna Paper Company was low in the current bidding at 10.76 cents. This item was awarded to the same concern six months ago at 9.31 cents.

On stationery bond No. 20 the Aetna Paper Company bid low at 10.86 cents. The same concern six months ago was the low bidder on the item at 10.31 cents, but the bid was rejected as were all the bids in this class. A year ago this item was awarded to the Aetna Paper Company at 12.28 cents.

On commercial ledger Dobler & Mudge in the current bidding were low at 14.2 cents. Six months ago this item was awarded to the same concern at 14.31 cents and it was awarded last year to the Carew Manufacturing Company at 19.5 cents.

On smooth colored cover paper the R. P. Andrews Paper Company bid low in the current bidding at 8.48 cents. On this item Knowlton Brothers bid low six months ago at 8.89 cents but all the bids were rejected. This item was awarded in 1921 to the American Paper Company at 9.97 cents.

On Kraft wrapping the R. P. Andrews Paper Company in the current bidding was low at 6.6 cents. Dobler & Mudge were low on this item six months ago at 7.3 but all the bids were rejected.

On manila boards Samuel S. Alcorn was low in the current bidding at 4.95 cents. This item was also awarded to Samuel S. Alcorn six months ago at 4.75 cents and was awarded in the bidding in 1921 to the Whiting-Patterson Company at 5.9 cents.

Paper Mills Bustle

The encouraging reports that have been coming to hand of increasing activity in the pulp and paper industry in all sections of the country is strongly confirmed in some figures that have just been published by the Bureau of Labor Statistics of the Department of Labor.

According to the figures of the Bureau, there were 20,011 persons employed in these 58 paper mills during the month of June, 1921, increasing to 23,827 in June, 1922, which is an increase of 19.1 per cent. The payrolls in these 58 establishments were also increased in June, 1922, over June, 1921. In June, 1921, the payrolls amounted to \$449,660 increasing in June of this year to \$559,626, which is an increase of 12 per cent.

The Bureau also received reports from 58 paper mills showing the employment in May and June of this year. In May there were 23,401 persons employed in the 58 establishments, increasing slightly in June to 23,827, which is an increase of 1.8 per cent. The payrolls also increased slightly from \$551,548 in May to \$559,626 in June, which is an increase of 1.5 per cent.

Regarding the wage changes in the paper industry during the period May 15 to June 15, the Bureau says: "One mill gave an increase of approximately 14 per cent to 23 per cent of the employees.

A wage decrease of 12 per cent, affecting 60 per cent of the employees was reported by another establishment. A decrease of 10 per cent to 96 per cent of the force was reported by one plant. When per capita earnings for June were compared with those for May, a decrease of 0.3 per cent was noted."

Senate Discusses Paper Tariff Schedule

(BY TELEGRAPH TO THE PAPER TRADE JOURNAL.)

WASHINGTON, D. C., August 1, 1922.—P. G. Wright of the United States Tariff Commission and Constant Southworth appeared before the Finance Committee on Tuesday in executive session in connection with the paper schedule of the tariff bill. The bill comes up for discussion on the floor of the Senate on Wednesday with indications that it will be completed by Thursday.

On Tuesday the committee discussed paragraph 1300, which is the chemical wood pulp item, but took no action, the indications being that it will remain at five percentum ad valorem.

Almost all of the paragraphs of the paper schedule will be reduced as to the ad valorem rates but the specifics are liable to remain as they were originally reported out by the committee.

Paragraph 1304 was also discussed at length which is the tissue paper item. There has been considerable discussion as to whether the rate should remain at eight pounds or be reduced to six pounds. It is understood that Senator Smoot rather favors the six pound weight, no definite action was taken by the committee on Tuesday.

In paragraph 1305 there is some talk of putting all of the coated papers together and changing the rate of five cents per pound and the ad valorem to a straight ad valorem rate. The committee will again discuss the paper schedule in executive session on Wednesday morning and make definite amendments to the schedule.

THE SESSIONS WEDNESDAY MORNING

WASHINGTON, D. C., August 2, 1922.—A big light is developing on the five percentum duty of chemical pulp.

The Finance Committee in executive session Wednesday, made a number of changes in the schedule. Wall-board was reclassified in paragraph 1302 and a duty of five percentum placed on it, leaving paper board, etc., at ten per cent.

In paragraph 1303 filter masse, etc., was reduced from one and one-half cent and twenty-five per cent to same specific and fifteen per cent. In paragraph 1304 weight basis was reduced from eight to six pounds and bible paper classified separately with duty of four cents and fifteen per cent. Filter paper was taken out of 1304 and replaced in 1309 with duty of four cents and fifteen percentum. In 1305 coated papers fifteen per cent was added to five per cent duty and embossed five per cent and twenty percentum reduced to five cents and fifteen percentum. Other reductions are also probable.

English to Build Paper Plant in British Columbia

[FROM OUR REGULAR CORRESPONDENT]

CRANBROOK, B. C., August 1, 1922.—In the course of his visit to Cranbrook the Provincial Minister of Lands announced that a pulp and paper manufacturing plant would shortly be established on the Columbia Lake, giving employment to about 1,500 men.

An English syndicate controlling a large acreage of spruce in the Canal Flat district is said to be behind the project and intends shortly starting work on a combined sawmill and pulp and paper plant.

Niagara Felt Co. Increases Capital

[FROM OUR REGULAR CORRESPONDENT]

NIAGARA FALLS, N. Y., July 31, 1922.—The Niagara Felt and Paper Company has filed notice with the Secretary of State at Albany of an increase in its capital stock from \$60,000 to \$200,000.

Plans for Salesmen's Conference

CHICAGO, August 1, 1922.—With one leading speaker already engaged, the plans are being pushed by the Chicago officers and members of the Salesmen's Association of the Paper Industry for the fall meeting, to be held October 17, at the time of the fall business conference in Chicago of the American Paper and Pulp Association.

J. L. Fearing, vice-president for the Chicago district, has named a committee of fourteen as a general convention committee, and a meeting will soon be called of this committee when a chairman will be elected, and its members divided also into subordinate committees, each of which will be held responsible by the central committee for particular phases of the Chicago convention. The general committee is as follows: R. H. Butterworth, Champion Coated Paper Company; J. H. Coy, Flambeau Paper Company; H. H. Curtis, Consolidated Water Power and Paper Company; G. H. Fay, Mead Sales Company; A. N. Forsythe, Forsythe Paper Company; F. V. Fox, International Paper Company; G. K. Gibson, Wausau Sulphate Fibre Company; R. B. Harrison, Paterson Parchment Paper Company; C. G. Mather, Eddy Paper Company; J. C. Reynolds, West Virginia Pulp and Paper Company; J. R. Russell, Marathon Mills Paper Company; B. S. Stewart, Eastern Manufacturing Company; F. P. Whiteley, Munsing Paper Company; F. D. Wilson, Chicago Coated Board Company; J. L. Fearing, International Paper Company, ex-officio.

Pulp & Paper Products Co. to Start Mill

QUAKER HILL, CONN., July 31, 1922.—The Pulp and Paper Products Company, recently organized, has purchased the old Woodworth paper mill and will start it on the production of wrapping, book and specialty news as soon as alterations are completed and new machinery is installed. The new equipment will consist of one 500-lb. and one 700-lb. beaters, two washers and one 58-inch cylinder machine. The plant is expected to turn out from 16,000 to 20,000 pounds per 24 hours.

The officers of the company are Grant Hammond, president; E. M. Sime, secretary and treasurer, and Thomas B. Woodworth.

The superintendent, William Woodworth, is a grandson of Oliver Woodworth, who established the mill in 1856 and who operated it until his death in 1892 in the production of tissue. William Woodworth, the grandson, is fully acquainted with the paper-making business, having resigned as master mechanic at the Montville Paper Company's plant July 1.

May Reject All Paper Bids

(BY TELEGRAPH TO THE PAPER TRADE JOURNAL.)

WASHINGTON, D. C., August 1, 1922.—Indications are that the joint congressional committee on printing may make no awards on the government printing office bids but may reject all the bids opened on Monday of this week. The bids were considered high and there is no time to readvertise for new bids before the first of September. Therefore if bids are rejected next Monday, paper for the remainder of the year will be purchased on the open market, which has been done before.

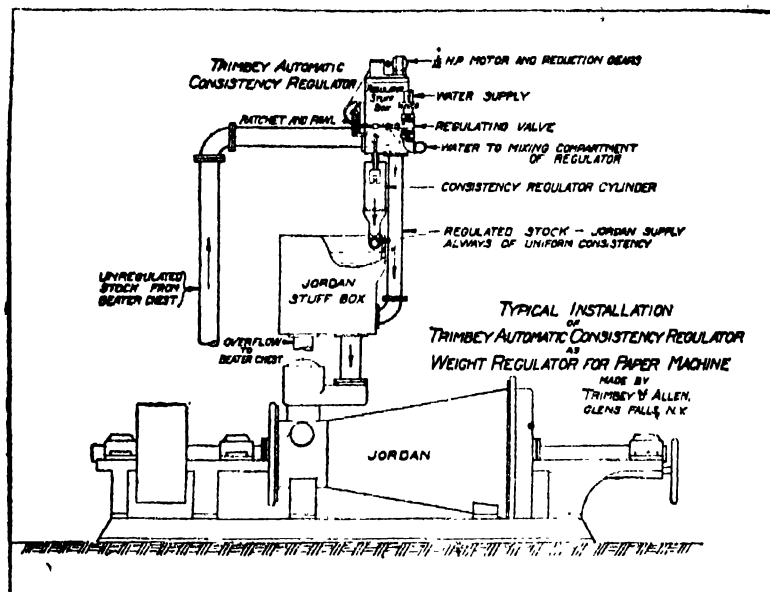
U. S. Bids and Awards for Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 2, 1922.—The Purchasing Office of the Government Printing Office has received the following bids for 15 reams brown paperoid, 19 x 24": Whitaker Paper Company, \$.138, \$.1743 and \$.204 per pound; Wilkinson Bros. & Co., \$.1065; R. P. Andrews Paper Company, \$.096; Maurice O'Meara Company, \$.105; Mathers-Lamm Paper Company, \$.139.

Bids will be opened at the Printing Office for 90 pounds of 19 x 24" 14½ lbs. facing stereo tissue paper.

UNIFORM STOCK



This is the machine that will regulate your paper stock to a uniform consistency, thus insuring **UNIFORM BRUSHING ACTION** at the Jordan. Given stock of uniform character and consistency going on to the wire you will get **UNIFORM WEIGHTS** and **UNIFORM RUNNING CONDITIONS**.

This regulator will also cause to be delivered at Beaters, Mixers or Bleachers, stock of a set, uniform consistency.

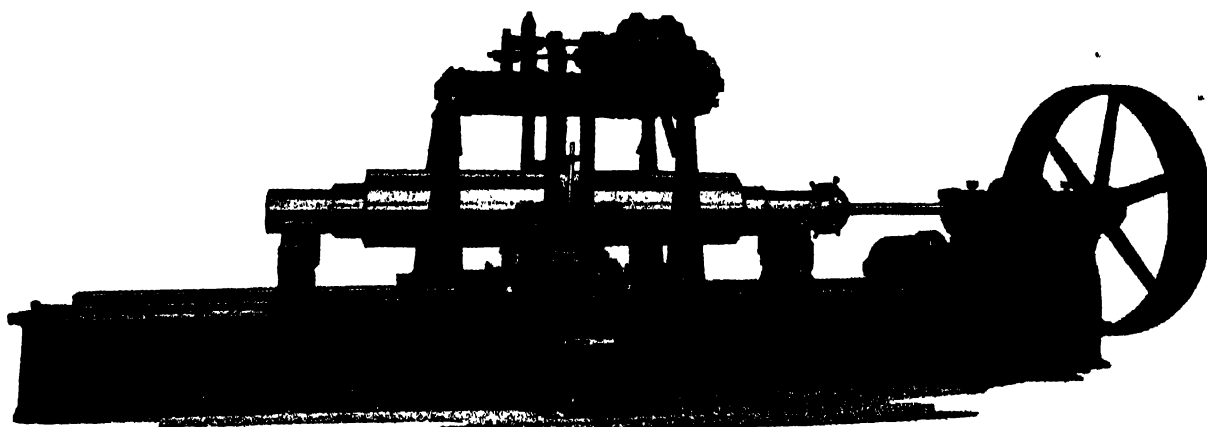
See our exhibit. Booth 515, 8th Exposition of Chemical Industries, Grand Central Palace, Sept. 11-16.

TRIMBEY MACHINE WORKS

Glens Falls, N. Y.

M. G. TIBBITTS, Sales Manager

LOBDELL **ROLL GRINDERS** are the only machines of the kind fitted with automatic crowning device which develops a perfect crown without the use of a guide or former and repeated trying for the correct setting.



LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

LOBDELL CAR WHEEL CO. Est. 1826 **Wilmington, Del. U. S. A.**

Section of the Technical Association of the Pulp and Paper Industry



AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by W.G. Mac NAUGHTON, Secretary

PAPER TESTING METHODS

Microscopical, Chemical, and Physical Processes Described with an Account of the Apparatus Employed

BY COMMITTEE ON PAPER TESTING, TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY

(Continued From Last Week)

13. Degree of Sizing.

Several methods have been proposed for determining the sizing quality of paper. Practically all of these methods are merely comparative and a recent series of tests indicated that no two laboratories of observers would grade various samples even in the same order. The chief criticism of the majority of the methods used is that no account is taken of the thickness of the paper.

a. Flotation Methods. A simple qualitative test to indicate the effectiveness of the sizing as a preventive of the absorption of ink, may be made by using the Ink Flotation Test *(110). This method involves the drawing of a strip of paper over the surface of an iron tannate ink and allowing it to drain and dry naturally. Upon examination of the surface with a low-power microscope, a well-sized paper will show no indication of the fiber having absorbed the ink. Any variation in the depth of color on the surface will indicate a lack of uniform sizing. This test may be still further developed by erasing the surface with an ink eraser (a spun glass eraser is most suitable) and again dipping the sheet as before. A paper well sized throughout the sheet will show little or no additional absorption of ink at the erased spot. This test is only comparative but may be valuable to a mill in checking the daily progress.

For comparative sizing effect, squares 2" x 2" are cut from each sample. These are subjected for at least thirty minutes to the same atmospheric conditions. Each square is then dropped upon an ink bath and the time in seconds recorded from the moment the sample touches the ink to the penetration of ink through the upper surface of the sheet. The average of an equal number of determinations, at least six, is used for comparative sizing effect in each sample. It is absolutely essential that comparative tests be made under identical atmospheric conditions and by the same operator, because atmospheric moisture and the ink bath temperature may greatly influence the penetration of the paper and different people have different judgments as to when the ink is "through."

The ink used for the above test is made as follows:

Tannic acid (dry).....	23.4 grams
Gallic acid (crystals).....	7.7 grams
Ferrous sulphate (crystal).....	30.0 grams
Dilute hydrochloric acid (U. S. P.; sp. gr. 1.049; 10% HCl by weight).....	25.0 cc.
Phenol.....	1.0 grams

Blue Dye (Bavarian Blue S & J No. 478)..... 2.2 grams
Water to make up to 1,000 cc., allow to settle, and decant from any sediment.

Note—Any water soluble basic aniline blue, as Niagara 3B, National Aniline Company, may be used in place of Bavarian blue.

Keep the temperature of the ink constant. Use the ink but once.

b. Electrolytic Method. *(105,112). Since 1917 there has been an increasing interest and use of the conductivity or electrolytic method for determining the sizing quality of paper. There have been a number of variations of the principle first proposed by Okell but they are all modifications to attempt to make the method of more value and to make it possible to interpret the data obtained.

When a sheet of paper between two electrodes is surrounded by an electrolyte and an alternating current is passed through the whole, there follows a decreasing resistance or increasing conductance as the electrolyte penetrates the sample. The sample of paper is clamped in the cell unit, which is itself a part of a wheatstone bridge. The accompanying photograph illustrates the various parts of a rather elaborate outfit. In this case, a recording drum is attached so that the data are plotted as a curve. The value of this method is that, in principle it may be made very accurate, the curves may be reproduced with test samples from the same sheet, and the curve always presents a very regular aspect. The method is of considerable value as a control method during mill runs, after a curve has been determined for a particular kind and weight of paper. It does not seem possible, however, with the limited data available to recommend the method for general use and it is doubtful that the data can be interpreted in terms of any fundamental unit.

14. Finish or Gloss *(56)

a. Ingersoll Glarimeter. The glarimeter (invented and developed by L. R. Ingersoll for the Forest Products Laboratory), is an instrument for measuring the gloss or degree of finish of paper. It depends in principle on the fact that light reflected at an oblique angle from a sheet of paper is partially polarized, the degree of polarization depending on the gloss and being taken as a measure of it.

The way in which this principle is applied is made clear by the diagram. Unpolarized (ordinary) light from the lamp is partially

polarized on reflection from the sample of paper, P, and then enters the polarimeter or "glarimeter" which consists of a slit, S, quartz Wollaston double-image prism, W, lens, L, and small nicol prism, N, mounted in a divided circle. The eye at E sees a field of view divided into two parts illuminated respectively by the diffusely and specularly reflected light from the paper, and the diffusely reflected light alone. A setting is made by turning the nicol until the two halves are equally bright when the gloss may be read at once from the divided circle. On the scale chosen white blotting paper reads about "20 degrees gloss," ordinary machine finish around 30 and high supercalendered about 40. The highest gloss on white paper runs about 50 degrees.

The instrument furnishes a ready means for the control of the supercalendering process and renders possible uniformity of product. Readings requires only a few seconds of time and may be made by an almost inexperienced operator and in an ordinarily lighted room. Colored papers may also be tested if a suitably colored glass is placed in the eyepiece.

b. *Martins-Koenig Photometer*. The accompanying cut of the type of photometer used in connection with the determination of finish and translucency of paper is given because of the increasing interest in the use of these instruments. The scale, which is engraved on a platinoid circle, is divided into angular degrees and densities. It is understood that this type of photometers is to be produced in this country.

15. Volumetric Composition *(3)

The determination of the volume composition of a paper is at best only an approximation but it is at times desirable to carry it out. The weight of a cubic centimeter of the paper is first ascertained by calculation from the thickness of the sample and the weight of a measured area. The percentage by weight of the various materials present, fibers, clay, size, etc., is then determined in the usual way and from this the weight of each in a cubic centimeter of the paper is calculated. The weight of each substance in grams divided by its specific gravity gives the volume occupied by it, and the sum of all of these volumes subtracted from 1.0 gives the volume of air per cubic centimeter of paper. This method is



PLATE No. 38. SIZING TEST APPARATUS * (112)

An elaborate set-up with recording drum for the study of the electrolytic method of determining the sizing quality of paper. (Bureau of Standards.)

fairly accurate when only fibers, clay and rosin are present but when other substances are added, as in coated papers, the problem becomes more complex and the results less reliable.

If the volume of air per cubic centimeter of paper is the only information needed it may be obtained by determining the actual specific gravity by weighing in air and then in oil of known density

exactly as in making specific gravity determinations in water. It will be found necessary to expose the paper, submerged in oil, to reduce pressure for some time in order to be sure that all air is removed and replaced by oil.

16. Retention of Loading.

By retention of loading is meant that per cent of the entire amount of loading material added to the beater, that is retained in the finished product.

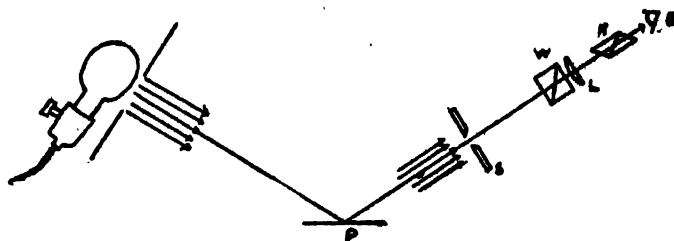


PLATE No. 40. GLARIMETER PRINCIPLE

Cut showing the arrangement of lenses and the principle of the Ingersoll glarimeter. (L. R. Ingersoll.)

Secure about a five-pound sample of the filler to be used, being careful to select a representative sample. Break up all lumps, spread on a flat surface, divide into four parts, by dividing the pile by two lines at right angles to each other crossing at the center of the pile. Select two opposite quarters, mix and proceed as before. This is known as the "Quartering Method of Sampling." This quartering method is continued until about 25 grams of loading material is obtained, which is then placed in a bottle for further use. From this bottle, remove a 1-gram sample, dry at 105° C. to constant weight and calculate per cent of moisture in the loading material. Place the dried residue in a crucible and heat at the full heat of a Meker burner until a constant weight is secured, then calculate the per cent of water of composition in the dry clay.

(Have clay in a finely divided state and stir frequently during burning.)

Secure sample of pulps to be used and determine per cent of

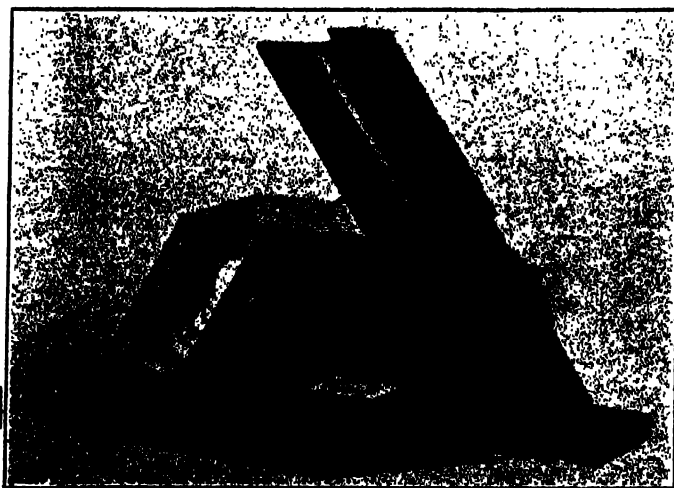


PLATE No. 39. GLARIMETER

A device developed by L. R. Ingersoll for the purpose of measuring the finish or gloss of paper. (Central Scientific Company, Chicago.)

moisture and per cent of ash. Weigh the pulp added to the beater. Weigh the clay added to the beater. After running the paper over the paper machine, secure several pieces as a representative sample, dry and make the ash determination on the paper. The above mentioned data used in the following formula will give the per cent of clay used and the per cent retention.

Let P = weight of pulp added (in pounds).
 C = weight of clay added (in pounds).
 A = Per cent ash in the finished paper.
 Ap = Per cent ash in the pulp.
 Wc = Per cent water of composition in the clay.
 Mp = Per cent moisture in the pulp.
 Mc = Per cent moisture in the clay.

The formula for per cent of clay should be as follows:

$$(1) \% \text{ of clay used} = \frac{100 \times C}{P}$$

$$(2) \% \text{ retention} = \frac{100 A \times P}{C (100 - A)}$$

$$(3) \% \text{ of clay used} = \frac{100 C (1 - Mc)}{P (1 - Mp)}$$

$$(4) \% \text{ retention} = \frac{100 P \times (A - K)}{C (100 - A - K)}$$

The value of K is the per cent of filler not derived from the loading added. An average value of K is 0.50 so that the formula (4) may be used as above or as follows:

$$(5) \% \text{ retention} = \frac{100 P (A - 0.5)}{C (100 - A - 0.5)}$$

Formulae (3) and (5) are recommended for use by the Technical Association of the Pulp and Paper Industry, though (1) and (2) may be used when accuracy is not essential or when the values for moisture content are unknown. Formula (4) does not take into consideration the per cent water of composition in the loading. Where this known suitable correction may be made.

No account is taken of the ash from alum or rosin size as the maximum amount from these factors is probably under 0.05 per cent and therefore negligible. An ash determination need not be calculated beyond the first decimal place. (See ash determination under chemical testing.)

An alternate retention formula, developed in the laboratory of

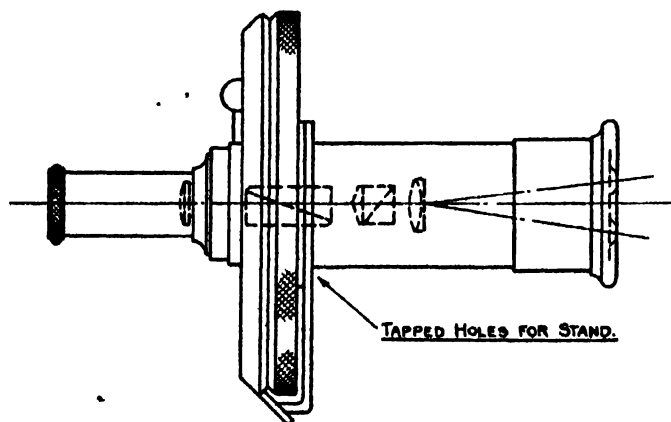


PLATE NO. 41. MARTINS-KOENIG PHOTOMETER

A sketch of a photometer used for Ingersoll glarimeter. (Courtesy of Adam Hilger, Limited, London.)

the S. D. Warren Company, Cumberland Mills, Maine, is suggested as being of value, as it may be used without making tests that interfere with production of paper.

A = Per cent of ash in air-dry stock going to machine
 B = Per cent of ash in air-dry paper at reel
 C = Per cent of bone dry filler lost on ignition.

$$0.94 B (100 - 100 C - A)$$

$$\text{Retention} = \frac{A (100 - 100 C - B)}{A \text{ and } B \text{ are considered as whole numbers and } C \text{ as a decimal.}}$$

A and B are considered as whole numbers and C as a decimal.

17. Conducting Particles

To show the presence of conducting particles in paper 0.5 or 0.75 mils thick, the sample is placed upon a metal plate which has been polished to a smooth plane surface. This plate is connected

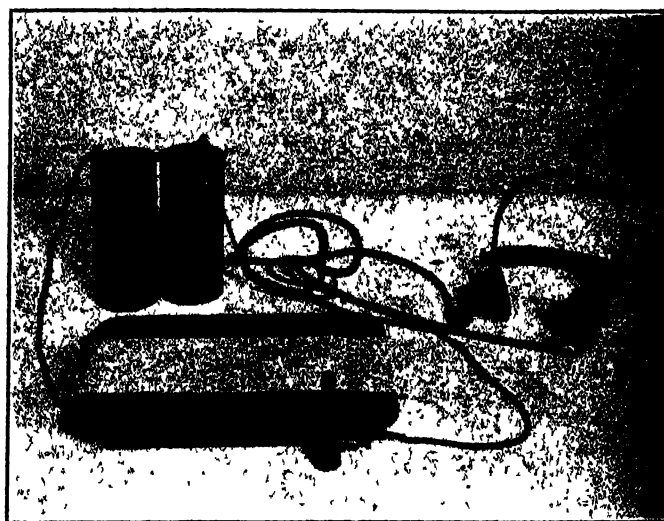


PLATE NO. 42. CONDUCTING PARTICLES

An arrangement for easily determining the presence of conducting particles in thin paper, such as condenser paper (Pittsfield Works Laboratory, General Electric Company) (Bureau of Standards.)

in series with 3 dry cells, a model 280 Weston voltmeter of 3-volt range or a similar instrument, and a metal piece which has a perfectly flat under surface and will be in contact with all parts of the plate upon which it rests. This metal piece is about 1 inch long and 1/2" wide and is attached to a handle for convenience in using. It is called the detector. To test paper, place a measured area upon the plate, make contact with the metal detector and the plate and if there is deflection of the voltmeter indicating that the voltmeter will show any drop in potential that occur when a conductor is between the plate and the movable detector, the instrument is ready to use. Pass the detector slowly over the paper on the plate, using light pressure. When a deflection of the voltmeter indicates that there is a conducting particle in the sheet between the detector and the plate, the position of the detector is marked and it is then moved over the spot at right angles to its former position and the paper marked and it is then moved over the spot at right angles to its former position and the paper marked again when deflection occurs. This locates the particles within a half inch square and makes it available for microscopic study. Results are expressed in terms of number of conducting particles present per square foot of paper. This instrument is intended for papers of 0.75 mil thickness or less. With thicker papers, the particles cannot be registered with dependable accuracy because they seldom extend through the full thickness of the sheet. Comparison of iron particles present as shown by chemical tests give numbers far in excess of the number of iron particles that are actual conductors in the sense of spoiling the paper for electrical purposes. This instrument is intended for use in testing papers specified for use in electrical equipment.

An additional method is indicated by the accompanying photograph. The small metal piece in the foreground is used as a detector and the presence of a conducting particle is indicated by a click in the telephone receivers.

18. Resistance to Water Penetration

Various simple methods have been proposed for this purpose and they are included as they may be of some assistance.

A quart mason jar is used in the test. A circular hole of one inch in diameter is cut in the metal top and the bottom of the jar is broken out. The sample to be tested is placed in the metal top, between the rubber washer and the metal and firmly screwed in place. The jar may either be filled with water or may be reversed and partially immersed in water. The temperature of the water should be 70°F. The length of time for penetration of the water will indicate a relative resistance.

As in the above case, a circular hole of one inch in diameter is

cut in the metal top, the sample placed in the top between the rubber washer and the metal, a bone-dry weighed sample of absorbent cotton or paper is suspended in the jar, the lid put on and the jar reversed and partially immersed in water at 70°F. After a predetermined length of time, the absorbent cotton or paper is removed and immediately weighed. The increase in weight will indicate a relative value for moisture penetration.

(To be continued)

PAPER DAY AT CHEMICAL EXPOSITION

Each year the National Exposition of Chemical Industries the eighth annual exposition of which will be held this year at the Grand Central Palace in New York, during the week September 11-16 has had a large number of exhibits of especial interest to the pulp and paper industry. Entering into the paper itself from fillers, sizes, dyes, bleaches chemicals, through processes for the treatment of the pulp, the manufacture, and even the finished paper, the machinery important to the paper industry is there and instruments of control not only those for the paper machines but for every phase of production even to the production of steam in the power plant, watchdogs over the consumption of coal and its combustion.

This year there will be many such interesting exhibits and a novel feature has been introduced. The Technical Association of the pulp and paper industry which has held several meetings, including the regular fall meetings, at the past expositions, will hold a special meeting one day during the week. This will be known as "Paper Day," and the novel feature is the program which has been arranged. Like all technical and scientific societies, the T. A. P. P. I. meetings always have a program composed of papers presented upon scientific and technical subjects but in which no commercial connection or mention may be made known. But this program which has been arranged, the date for which will be announced later, is comprised of speakers chosen from among the exhibitors. The program will be technical and scientific and while mention of commercial articles will be permitted, the speakers, who are experts in their fields and competent to give a broad discussion of the subject they treat, will keep the discussion free of selling talk.

The program as arranged follows:

W. C. Edge, Paul B. Huyette Company, "Safety and Efficiency Appliances for the Boiler Plant."

E. J. Trimbe, Trimbe Machine Works, "Trimbe & Tibbitts Proportioning and Metering System for Paper Stock."

Geo. L. Dickey, Industrial Filtration Corporation, "Rotary Filters for Washing of Paper Pulp and for Filtering and Washing Caustic Lime Mud."

R. G. Walker, Oliver Continuous Filter Company, "Efficiencies and Economies in Washing Black Liquor from Digested Soda and Sulphate Stock."

L. D. Mills, The Merrill Company, "The Merco Nordstrom Plug Valve."

H. S. Thayer, Atlas Electric Devices Company, "Testing Colored Materials for Fastness-to-light."

A. E. Campbell, The Schaeffer & Budenberg Manufacturing Company, "Instruments for Promoting Efficiency in the Paper Mill"

H. G. Bean, The Bristol Company, "Application of Recording Instruments in Pulp and Paper Industry."

C. C. Phelps, Uehling Instrument Company, "The CO₂ Record of Combustion Efficiency."

Harry Carlson, Sandvik Steel, Inc., "Steel Belts and their Application to the Solution of Conveying Problems."

H. Austin, Ernest Scott & Company, "Scott Evaporator as Used in the Pulp Mill for Recovering Soda from Spent Liquors."

L. G. Chase, Yarnall-Waring Company, "The V-Notch Meter and its Application to the Paper Mill."

W. D. Mount, Glamorgan Pipe and Foundry Company, "Continuous Causticising with Lime Recovery and Reuse."

Jerome D. Stein, Grinnell Company, "The Grinnell Dryer Applied to Wall-Paper and Coated Paper."

L. Mann, National Aniline and Chemical Co., "The proper selection and application of dyes for paper."

Ball Bearings on Cylinder Molds

By JOHN KEPKE, JR.

The present increasing interest in the application of ball bearings to paper making machinery makes it worth while to look back over the history of this subject. In doing so we find that the oldest common use of ball bearings in the paper industry, and probably still the commonest use, is on cylinder molds.

Over the past year or two the emphasis has seemed to be on the value of ball bearings in the development of the modern high speed machines. Such fast machines are all liberally equipped with ball bearings. This has served to bring ball bearings into more general consideration than had formerly been the case; but, nevertheless, there continue to be more ball bearings on slower moving paper machinery than there are on the high speed machines which have been the sensation of the past two years.

On cylinder molds particularly the installations are numerous, having been started very early and having become steadily more general. Inasmuch as the cylinders are almost always driven by the pull of the felt, it has been recognized that reduction of bearing friction is of great importance in felt conservation.

For eight or ten years a number of manufacturers have regularly supplied ball bearings on cylinder molds, while at the present time they are standard equipment with a majority of the larger paper machinery builders.

Ball bearing cylinder molds are running not only on board and tissue machines but also on wet machines—being therefore in use in the pulp industry as well as in paper making itself.

The advantages have been found to lie chiefly in felt savings. Excessive drag on the felt is largely eliminated, and felt life is thereby lengthened—with fewer emergency shutdowns as well as lower felt costs.

With the machine running idle and the couch rolls lifted away, the pull of the felt has been found to turn a ball bearing cylinder mold very readily, while a plain bearing cylinder would not revolve.

Power savings also have undoubtedly been effected to a considerable degree, although actual figures are neither available nor easy to obtain. Indicative of this power saving is the fact that mechanically driven cylinder molds have had the drive removed when ball bearings have been installed.

Lately the application to cylinder molds has been supplemented by the use of ball bearings on couch rolls; and it is now standard practice with some manufacturers to supply ball bearing couch rolls with their ball bearing cylinder molds.—S. K. F. Industries.

PULP POSSIBILITIES ON THE PACIFIC COAST

By A. W. SCHORGER, C. F. BURGESS LABORATORIES, MADISON WIS

Horace Greeley gave to the youth of his generation the now famous advice—"Go west!" Present indications are that the pulp and paper industry will follow this advice, if not from choice, at least from force of circumstances. An orderly progression westward would readily become a stampede were it not for certain very important factors, the chief of which are distance from consuming markets and immense plant investment in the east.

The United States is faced with the peculiar situation of having practically all its pulp mills in the East, where there is but a small supply of pulpwood, while the West with its great forest resources has but few mills, in fact, out of 250 plants consuming pulpwood in this country only 11 of them are located on the west coast. What has been the result? Simply this. In 1920 as a result of our deficiency in pulpwood, pulp and paper, we paid a tribute to foreign countries of \$191,000,000. Most of this money went to Canada.

Urgent Need is Newsprint Pulp

The urgent need is pulp for newsprint. The newspapers combine a gargantuan appetite with a critical taste. They require the finest pulp woods, spruce, fir and hemlock. A more comprehensive view of the situation can be obtained by glancing at a few figures. In 1920 our paper production was the following:

	Tons
Paper board	2,313,000
News print	1,512,000
Book	1,104,000
Wrapping	832,000
Fine	389,000
Other grades	592,000
All grades	7,042,000

Against the above figures must be weighed the following importations:

	Value
Pulpwood, 1,211,444 cords	\$16,902,939
Wood pulp, 906,297 tons	\$9,418,185
News print paper, 729,867 tons	\$8,600,950

The United States in 1920 used about 5,000,000 cords of domestic wood. Converting the importations into pulpwood gives an additional 3,500,000 cords. We now reach the very disturbing conclusion that our forests are no longer supplying more than 60 per cent of our annual consumption of pulpwood.

Eastern Pulpwoods Diminishing

Of the pulp manufactured about 50 per cent consists of sulphite and 25 per cent of mechanical. Practically the only species used for this pulp were spruce, balsam fir and hemlock. The supply of domestic spruce in the East has decreased to the point where it furnishes less than half of our requirements, and continues to dwindle annually. Only sporadic attempts have been made at reforestation, and even though planting were pushed vigorously it would take many years for the annual increase to keep pace with the consumption. The use of the southern pines offers little hope since they are suitable neither for the manufacture of ground wood or sulphite pulp. For newsprint neither the ground wood or sulphite are bleached, while conifers cooked by either the sulphite or soda processes give dark pulps that bleach with difficulty.

The pulp and paper industry therefore faces the situation of buying more and more foreign pulpwood and pulp or going west where the wood is obtainable. The present drain on the Canadian forests cannot last indefinitely. The stands at present being cut are virgin timber, some of which has required a century

to reach merchantable size. The severity of the climate while leading to pulpwood of the highest quality, is not conducive to rapid growth. On the other hand the West Coast not only contains species suitable for the highest quality of pulp, but its mild climate and abundant rainfall offer extraordinary conditions for rapid reproduction.

Cost of Pulpwood

The cost of pulpwood has quadrupled during the past 20 years, reaching in 1920 the average figure of \$19.00 per cord. In 1918 the United States as a whole paid \$13.93, in New York it cost \$17.89, in Canada \$12.00, and on the West Coast \$8.90. The West accordingly had an advantage at that time over New York of \$18.00 per ton of sulphite when we consider that it takes two cords of wood to make a ton of pulp. The pulpwood prices for 1916 running about \$5.60 for the West Coast and \$11.00 for New York State are more in line with those prevailing at the present day, and shows a difference in pulpwood cost per ton of pulp of \$9.00. This is an advantage more apparent than real with the present economic status that allows a ton of pulp to be laid down on the Atlantic seaboard from Europe as cheaply as it can be transported across the state of New York.

The interesting and valuable data obtained by the Forest Service on the use of various woods in place of eastern spruce, leads inevitably to the conclusion that the best substitutes are to be found on the west coast. The chief requirements for mechanical pulp are appropriate woods and cheap power, both of which are obtainable in the West. The western species particularly adapted to the manufacture of mechanical and chemical pulps are given below:

Mechanical Pulp

Species	Color	Yield lbs.
Alpine fir (<i>Abies lasiocarpa</i>)	White	2,400
White fir (<i>Abies concolor</i>)		2,060
White fir (<i>Abies concolor</i>)		2,000
Amabilis fir (<i>Abies amabilis</i>)		1,870
Lowland fir (<i>Abies grandis</i>)		1,950
Engelmann spruce (<i>Picea engelmannii</i>)	Gray	2,100
Lodgepole pine (<i>Pinus murrayana</i>)		2,140
Sitka spruce (<i>Picea sitchensis</i>)	Pinkish	2,100
Western hemlock (<i>Tsuga heterophylla</i>)		2,160
Red fir (<i>Abies magnifica</i>)	Yellowish	1,975
Noble fir (<i>Abies nobilis</i>)		1,920
Western yellow pine (<i>Pinus ponderosa</i>)	Brown	2,060
Western larch (<i>Larix occidentalis</i>)		2,100

The species are arranged approximately according to color in comparison with eastern white to strength and other qualities. Alpine fir bears the distinction of being lighter in color than spruce, the standard pulpwood, and not according white spruce while Engelmann spruce is fully equal to the latter with respect to color.

The mechanical pulp from white fir is of very good quality when young trees are used, from the standpoint of production, power consumption, strength and color, the advantages are entirely in favor of the young trees over large old trees. The heartwood of old trees is always darker and more brittle than the wood of younger growth. All the firs grind easily and all give pulps suitable for newsprint, though that from amabilis fir and lowland fir are the better.

Engelmann spruce gives a pulp of excellent strength and color. Trees from Montana owing to their greater density give almost 200 pounds more pulp than those from Colorado. Sitka spruce has the longest fibres of any of the American spruces, averaging 5 to 6 millimeters in length; in fact some fibers will attain a length of 8 millimeters. This species forms large pure stands especially in Alaska and promises to be a pulpwood of the first

importance. While the pulp has a grayish tone and is not equal to white spruce, it nevertheless can be considered of high quality.

Hemlock Pulp Described

The pulp from western hemlock resembles that from Sitka spruce. The wood can be ground at higher pressures and a sharper stone than eastern hemlock. The pulp compares favorably with that from white spruce and is greatly superior to the product obtained from the eastern hemlock.

Gives Creamy Soft Pulp

Western yellow pine gives a creamy, soft pulp that is long fibered though fairly coarse. It can be ground under a variety of conditions, and appreciable amounts of resin do not give trouble. The quality of the wood varies greatly throughout its range. Some of the wood is so light in color and free from resin as to be sold as white pine. Some trees are very resinous and others so full of knots as to be unsuitable for pulp. Lodgepole pine yields a pulp that compares favorably with white spruce. This species also shows considerable geographical variation. The trees from the coastal plains have darker, more resinous woods than those from the Rocky Mountains and do not yield as good a pulp. Small trees growing at high altitudes give better pulp than the large trees from low altitudes. This generalization holds for most pulpwoods.

Larch Makes Poorest Pulp

Western larch among all the species mentioned gives the poorest mechanical pulp. The pulp obtained with a sharp stone contains so much fine material that it does not work well on the paper machine; consequently it is necessary to be content with a coarse shivey pulp, the brown color of which is an additional objection for newsprint. On the other hand when the wood is steamed before grinding, a good pulp is obtained suitable for the cheapest grades of wrapping paper. On the basis of its weight per cubic foot western larch gives about 200 pounds less mechanical pulp than it should. This decrease is due to a water soluble galactan, that will be discussed further below.

Sulphate Pulp

The sulphate process has the broadest application of any of the pulping processes and there are few if any conifers to which it cannot be applied. The pulp obtained by this process is unusually strong but has the disadvantage of being dark in color and frequently it is impossible to bleach certain species to a satisfactory white.

Species	Yield of Pulp lbs.	Character
Redwood	950	Long, fine, tender fibers
Incense cedar	950	Dark, strong, hard
Western yellow pine	1,100	Excellent, strong, hard
Sugar pine	1,150	Light, strong fibers
Lodgepole pine	1,120	Strong, light
Western larch	1,290	Dark, strong
Western hemlock	1,100	Very good, strong dark
Douglas fir	1,170	Good, dark
White fir	1,100	Very good, dark
Red fir	1,150	Very good, dark
Noble fir	1,100	Very good, dark
Grand fir	1,140	Very good, light
Amabilis fir	1,100	Excellent
Alpine fir	1,050	Excellent
Sitka spruce	1,150	Good
Blue spruce	1,150	Good
Engelmann spruce	1,000	Good, light color

Too Valuable for Sulphite and Groundwood

Most of the above woods are too valuable for mechanical and sulphite pulps, to be converted into sulphate pulp for which the market is much more limited. At the present time most of the sulphate pulp is used in wrapping paper and container board.

Sulphite Pulp

The western coast contains a far greater number of species

suitable for sulphite pulp than does the East, as will be seen from the following table:

Species	Yield lbs.	Character of Fiber
Blue spruce	1,050	Superior strength and color
Engelmann spruce	990	Superior strength and color
Sitka spruce	1,080	Superior strength and color
Amabilis fir	1,060	Fair strength, good color
Alpine fir	1,010	Good strength, fine color
Grand fir	980	Fair strength, fine color
Noble fir	1,010	Poor strength, fine color
Red fir	1,080	Good strength and color
White fir	950	Good strength and color
Douglas fir	850	Moderate strength, poor color
Western hemlock	1,050	Good strength and color
Western larch	1,300	Poor in strength and color
Lodgepole pine	1,040	Excellent strength and color
Western yellow pine	1,130	Inferior in strength and color
Sugar pine	1,010	Poor strength, fair color
Incense cedar	810	Strong but poor color
Redwood	920	Moderate strength, dark color

The spruces listed above are easily reduced to pulp by the sulphite process though Engelmann spruce pulps least easily of the three; however, all the pulps bleach easily.

All the true firs pulp easily; they bleach readily, also, with the possible exception of red fir. Douglas fir offers a decided exception. The generic name of this species (*Pseudotsuga*), translated, is false hemlock. The tree is neither a fir nor a hemlock, the wood in most respects resembling pine. This point should be borne in mind in considering this species for pulp. The true fir rank with the spruces in their suitability for mechanical and chemical pulp, but Douglas fir refuses to be so amenable to pulping discipline. It is hard to pulp by the sulphite process, difficult to bleach, and the yield is only about 80 per cent of that of spruce. The best that can be said for it is that it gives a good grade of kraft.

Western hemlock pulps and bleaches easily while western larch is just the opposite. It is hard to pulp giving a product difficult to bleach and containing much short fiber. Extraction of the chips with hot water to remove the tannins and galactan with subsequent cooking with sulphite liquor on a commercial scale resulted in a distinct improvement in the color of the pulp, but it was still entirely too dark for newsprint.

Sugar pine, "Rocky Mountain" lodgepole, and western yellow pine pulp quite easily, but the fibers are rather difficult to bleach. Some lowland lodgepole from the coast proved to be difficult to pulp and shivey. The pulp from western yellow pine as a rule is inclined to be shivey.

Incense cedar and redwood cook easily but give low yields, and the pulp in both cases is difficult to bleach.

Utilization of Wood Waste

In 1920 pulp mills used but 170,000 cords' of slabs and other mill waste. This of course represents but a fraction of the wood waste produced. The nature, of the wood waste itself is one of the factors preventing more extensive utilization since it consists largely of yellow pine and Douglas fir that cannot be pulped to advantage except by the sulphate process. The wood used should be comparatively free from decay, bark and knots, since the latter materially affect the yield and quality of the pulp, and the consumption of chemicals. Douglas fir comprises about 75 per cent of the total lumber sawed in Washington and Oregon. This species along with western yellow pine and sugar pine, representing so large a proportion of the mill waste are best suited for kraft though there are good possibilities of converting the latter species into easy bleaching sulphate for book paper.

While the groundwood experiments made by the Forest Service were in progress, it was noticed that western larch gave about 200 pounds less pulp than should be expected from the weight of the wood per cubic foot. The pulp carried away in the grinding water was insufficient to account for this difference and the only reasonable conclusion to be reached was that the wood contained a considerable amount of substance soluble in water. The writer in investigating this point made the interesting discovery

that the wood contains from 10 to 20 per cent of water-soluble galactan. Most of the conifers were subsequently found to contain small amounts of this substance, but western larch is unique in its high galactan content, and so far as known there is no other tree in the world that compares with it in this respect.

The galactan when separated in the pure state is a white powder resembling starch. It is related to milk sugar to this extent that on hydrolysis the galactan gives the sugar galactose, while milk sugar gives equal parts of glucose and galactose. When the water extract of the wood is oxidized with nitric acid, a white acid called mucic acid is obtained. Mucic acid has a variety of uses and is particularly adapted for use in baking powders in place of cream of tartar.

There is a large waste in logging western larch at the present time. The butt logs are so heavy and full of shakes that they are usually left in the woods; these butts, however, represent the parts of the tree richest in galactan. The C. I. Burgess Laboratories have investigated very fully the utilization of this wood. The wood ground after steaming gives a good grade of pulp and by recirculation of the grinding water (H. F. Weiss, U. S. Patent No. 1,339,489) the galactan can be recovered cheaply in a more concentrated form and converted into chemical products. The wood gives a quality of kraft pulp by the sulphate process and before cooking the chips should be extracted with water on the counter current principle. This preliminary treatment not only renders possible the recovery of a valuable by-product but materially reduces the consumption of chemicals since in the soda and sulphate processes the carbohydrates are converted into saccharic acids.

By-Products of Lumbering

Lumbermen to render their operations profitable must pay more and more attention to by-products. It has been said that the packers boast of using everything from the pig except its squeal, but when it comes to a tree even the bark is used. This unfortunately is true to only a very limited extent. Most of the western trees are characterized by very thick barks. The western species of larch, hemlock and yellow pine contain tannins of great value for the leather industry and promise to be of great future importance. Some barks when passed through a refining engine yield mechanical fibers valuable for boxboard, felts, and building papers. The bark of the redwood can be combed out mechanically in the dry condition to long, moderately strong fibers suitable for roofing papers and insulating felts.

Utilization of Redwood Waste

The utilization of redwood waste offers an interesting problem. The wood is soluble to the extent of about 25 per cent in water, the water extract being rich in tannin; the dark tannage obtained with the latter is a serious drawback to its use. Partly owing to the high water soluble content of the wood, the yield of chemical pulp is about 15 per cent below normal, which materially reduces the digester output. The pulp fibers are unusually long, but of only moderate strength; their color is decidedly dark and from 30 to 40 per cent of bleach is required. It was thought that a preliminary extraction of the wood with water before cooking would produce a pulp materially lighter in color; this did not prove to be the case however even when the extraction was made at 60 pounds pressure.

Redwood pulp possesses to a high degree the property of "wetness" or ease by hydration. It is interesting to note that the pulp from southern cypress has the same characteristic; in addition the wood of the living tree in both species has a very high water content. The redwood and bald cypress are not only related botanically, but geographically as well. They represent the oldest forms of our modern trees and their remains occur as far back as the Miocene. Perhaps the cellulose in these species has never

advanced in chemical dehydration as in some of the later conifers. The wood cooks so easily by the sulphite process and giving a pulp that hydrates so readily, that advantage should be taken of this opportunity for converting it into glassine and other grease-proof papers. For this purpose the natural color should not be objectionable—*The Timberman*.

New Map of Maine

A map of Maine on a scale of 1:500,000, showing the location of the power stations and transmission lines used in public service and the names of the public-utility companies, has just been published by the United States Geological Survey, Department of the Interior. The information in regard to the stations and transmission lines of public-utility companies is shown in red on the new base map of Maine, on a scale of 1:500,000, which has been prepared in co-operation with the Department of Agriculture in connection with the construction of highways under the Federal road act. The map can be purchased from the director of the United States Geological Survey for 50 cents, or the base map without the information in regard to public utility companies for 25 cents.

This map is one of the series of State power maps now being published by the Geological Survey. Similar maps are now available for New York, Pennsylvania, Massachusetts, Rhode Island, Connecticut, Maryland, Delaware, District of Columbia, Vermont, New Hampshire, New Jersey, Virginia, and Indiana, and copies may be purchased from the Geological Survey for 50 cents each.

These maps are valuable to those who are interested in the inter-connection of power plants, to those who wish to establish manufacturing plants within reach of electric power, and to municipalities that contemplate the use of electricity for light and power. Professional Paper 123 of the United States Geological Survey, entitled "A Superpower System for the Region between Boston and Washington," states that in general it has been found that industrial establishments which require 500 horsepower or less can purchase power more economically than they can generate it themselves. A study of nearly 200 steam-electric plants in the "superpower zone" indicates that the quantity of fuel they consume ranges from 6.23 pounds per kilowatt-hour for the small plants to 2.14 pounds per kilowatt-hour per plants that have a capacity of more than 100,000 kilowatts. Even more striking is the variation in the cost of maintenance, labor, and supply, which amounts to \$23.10 per kilowatt-year of effective capacity for small plants but only \$5.46 for plants of more than 100,000 kilowatts. In all but a very few industries it was found to be more economical for plants of less than 200 horsepower to purchase all the energy they require regardless of their requirements for heating. Almost the same is true for plants of 200 to 500 horsepower. It is only in plants that are larger than 500 horsepower and that have some special requirements for heating that the independent generation of power can be justified. Even in these plants the power supply and demand can not be completely balanced, and central-station connections should be available for taking up irregularities. Experience has shown that in plants using purchased power much of the fuel formerly used to supply heat in industrial process can be saved through the simplification of the heating arrangements by the elimination of power production.

These State maps, which show the location of the transmission lines of public-service companies, may be of use to companies or municipalities in indicating the possibilities for the purchase of power.

F. H. Johnson, Jr. Goes with Mattagami

F. Hayward Johnson, Jr., formerly of Niagara, Wis., where he was sulphite superintendent for the Kimberly-Clark Company, is now connected with the Mattagami Pulp and Paper Company, Smooth Rock Falls, Ont.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Properties, Chemistry and Testing of Raw Materials and Finished Incrusting Substances of Plants. Product. II.—E. Schmidt and F. Duysen. *Ber.*, liv, 3241-3244 (1921); *J. Soc. Chem. Ind.*, xli, 94A (Feb. 15, 1922).—The removal of incrusting substances is effected more conveniently by a solution of chlorine dioxide in 50% acetic acid than by alternate treatment with chlorine dioxide and sodium sulphite; the method has the advantage that the attacked incrustations remained dissolved in the acid. After this treatment, the presence in the tissues of polysaccharides which give a blue coloration can be ascertained by means of zinc chloride-iodine solution which gives only unreliable results in the presence of incrustations. The simplicity of the manipulations and the stability of the solutions render the chlorine dioxide acetic acid mixture valuable for microchemical investigations. The reagent causes the cell walls to swell somewhat but this action occurs so uniformly that the structural features of the plant tissues are not altered thereby.—A. P.-C.

West African Corkwood.—*Bull. Imp. Inst.*, xix, 10-13 (1921); *Chem. Abs.*, xv, 3554 (Oct. 20, 1921).—The tree yielding the corkwood was the *Musanga Smithii* ("umbrella tree"). The wood contained 8.8 per cent moisture, 0.6 per cent ash, and 51.5 per cent cellulose, and when treated with 20 per cent caustic soda for 8 hours at 160° the yield of dry pulp was 50 per cent. It is a promising material as a source of paper pulp.—A. P.-C.

New Zealand Waste Timber for Paper Making.—*Bull. Imp. Inst.*, xix, 1-10 (1921); *Chem. Abs.*, xv, 3554 (Oct. 20, 1921).—Results of the examination of eight New Zealand woods show that four species of *Fagus* (*Nothofagus*) yielded pulps of similar character which bleached readily and furnished fairly strong papers of good quality. The yields of pulp were 41.5 to 44.0 per cent, that from *F. fusca* being the best. The *Beilschmiedia Tawa* gave a yield of 42.5 per cent of pulp and yielded paper of similar quality to that obtained from the species of *Fagus*. The *Weinmannia racemosa* wood gave a rather low yield of pulp (36.5 per cent which, however, bleached satisfactorily and had good felting qualities. The strongest papers were obtained from the woods of *Pinus laricio* and *Pinus radiata* but the pulps from these woods did not bleach quite as readily as those from the other six samples. The yield of pulp was only fair (39 per cent).—A. P.-C.

Papyrus as a Paper Making Material.—I. Vidal and M. Aribert. *L'Agronomie Coloniale*, vi, 53 (1921); *Chem. Abs.*, xv, 3554 (Oct. 20, 1921).—The air-dry stems contained 15 per cent moisture and yielded 47 per cent cellulose, 2 per cent ash, 3.4 per cent fatty substances and 4.3 per cent water soluble matter. The material after treatment with steam at 1 to 2 atmospheres was heated with 13 per cent caustic soda of 6° Beaumé strength for 6.5 hours. The yield of pulp was 40 per cent and it could be easily bleached. Paper made from the pulp was of very good quality.—A. P.-C.

Commercial Utilization of Cotton Stalks.—*Bull. Imp. Inst.*, xix, 13-18 (1921); *Chem. Abs.*, xv, 3554 (Oct. 20, 1921).—Cotton stalks from the Punjab and Central Provinces, India, were examined with the following results: moisture 10.2 and 10.7 per cent; cellulose 44.1 and 40.3; ash 2.6 and 3.0, respectively. These stalks, treated with caustic soda under conditions similar to those employed in the manufacture of paper on a commercial scale, yielded 41 and 34 per cent of dry pulp, respectively. A paper pulp of fair quality which could be bleached to a pale cream tint resulted. The dry distillation was also investigated.—A. P.-C.

Treatment of Vegetable Fibers.—U. S. A. Patent 1,410,069.

—Charles Morionci, assignor to Socite Anonyme Des Brevets Peulfait, March 21, 1922. Same as Can. Patent 209,491, March 13, 1921. —See this journal, lxxiii, No. 19, 72, Nov. 10, 1921.—A. P.-C.

Production of Cellulose from Vegetable Matter.—U. S. A. Patent 1,402,210, G. J. Bustamante, Jan. 3, 1922. Same as Can. Patent No. 208,927.—See this journal, lxxiii, No. 18, 54, Nov. 3, 1921.—A. P.-C.

Production of Power Alcohol and Paper Pulp from Megasse (Bagasse).—G. J. Fowler and B. Bannerjee. *J. Indian Inst. Sci.*, iv, 241-260 (1921); *J. Soc. Chem. Ind.*, xli, 227A (March 31, 1922).—Megasse was subjected to acid hydrolysis under varying conditions of time, pressure, quantity and concentration of acid, with the object of obtaining a high yield of fermentible sugars without rendering the residual fiber unsuited for paper making. Under the best conditions 60 per cent of the theoretical yield of alcohol was obtained, equivalent to 8 to 9 per cent alcohol on the weight of megasse. The fibrous residue, amounting to about 52 per cent of the original material, can be treated by the soda process, and could be used for wrapping papers, boards, etc., or in admixture with rag pulp.—A. P.-C.

Corrugated Paper Board Tester.—U. S. A. Patent 1,413,305, J. W. Webb assignor to Webb Tester, Inc., April 18, 1922.—A metallic plunger having a relatively small face (of an area equal to that of a circle one-tenth inch in diameter) can be given a sliding vertical motion by means of a helical spring. Indicating means are provided to show the degree of compression of the spring and hence the pressure necessary to rupture the material being tested. The plunger may have either a wedge-shaped face, or a rectangular face having two or more wedge-shaped ridges, or a circular face. The machine can be used to test the bursting strength of the component parts of single faced corrugated board, paper, fiber-board, etc.; the crushing strength of the glue joint between the crests of the corrugations and the facing members; the tensile strength of the materials; and to indicate the deflection of the material before rupture in a bursting test, and the stretch before breaking in a tensile test.—A. P.-C.

The Action of Iodine Upon Cellulose, Silk and Wool.—J. Huebner and J. N. Sinha. *J. Soc. Chem. Ind.*, xli, 93-94T (March 31, 1922).—The authors have investigated the action of dilute solutions of iodine and potassium iodide in water on highly purified celluloses obtained from different kinds of wood, esparto, and other raw materials. Cellulose from poplar wood rapidly decolorized the iodine solution; and at the same time a pronounced odor of iodoform was developed. All the other celluloses behaved similarly, but the intensity of the odor varied and in every case was less pronounced than in that of poplar cellulose. On steam-distilling poplar pulp to which iodine and caustic soda had been added, pure iodoform was obtained. Similar results were obtained with other celluloses, natural silk, some of the artificial silks, wool, rubber, and other substances. The amount of iodoform produced seems to bear some definite relationship to the solubility of the different celluloses in caustic soda. The authors have obtained bromoform from cellulose and hope to succeed in getting chloroform.—A. P.-C.

Effect of Water and of Certain Organic Salts Upon Celluloses.—J. Huebner and F. Kaye. *J. Soc. Chem. Ind.*, xli, 94T (March 31, 1922).—Highly purified cotton or other cellulose when exposed to the action of water at a temperature of about 35° C. for a considerable time yields soluble compounds which are aldehydic in character; and if the celluloses are subjected to steam distillation the distillate contains aldehydic substances.—A. P.-C.

L.—Articles Produced from Pulp and Paper

Waterproofing Paper Yarn.—H. T. Boehme A. G. German Patent 346,061, Oct. 18, 1917.—The paper yarn or fabric is passed successively through a bath of montan wax or of crude montan wax emulsion and a precipitation bath containing a weak acid or an acid salt of an alkali metal of corresponding concentration.—I. G.

Gummed Cloth Sealing and Binding Tapes.—C. H. Crowell. *Paper*, xxx, No. 5, 7-8 (April 5, 1922); *Paper Trade J.*, lxxiv, No. 14, 36 (April 6, 1922); *Paper Mill*, xlv, No. 14, 148 (April 15, 1922).—It has long been desirable to have a proper and reliable test to accurately determine the quality of woven fabrics for binding purposes. It has been found that the well-known puncture test is of no value in determining the strength of cloth tape for binding purposes, owing to the fact that the testing apparatus must necessarily break the warp threads which in ordinary woven fabrics are much stronger than the woof threads. Tearing strength test, lengthwise of the material to be used, properly and adequately meets the requirements. This test is advocated for universal adoption. Recommendations are given.—I. G.

M.—General Equipment

Electrical Development for the Pulp and Paper Mill.—R. W. Leeper, H. S. Taylor, Ltd., Montreal. *Pulp and Paper*, xx, 245-248, (March 30, 1922); *Paper Trade J.*, lxxiv, No. 16, 28-32 (April 30, 1922); *Paper Mill*, xlv, No. 14, 105 ff., (April 15, 1922).—A discussion of the use of electricity in the paper mill and of the advantages of motor drive. Selection of the proper kind of motor is important and a careful analysis of the load conditions must be made before the motor is chosen for the work. The lighting of the paper mill is also discussed and its importance on the efficiency of the employees and rate of production is explained.—I. G.

Artificial Moistening of the Air in Paper Mills and the Influence of the Moist Air on Belts.—*Papierfabr.*, xx (Jan. 22, 1922).—Textile fiber belts and ropes behave in moist air just opposite to leather belts. Wire rope is unaffected, provided the wire is protected against rusting by a proper covering of cord. Moist air makes the collection of static electricity, which is always taking place due to the friction of the belt passing over the pulley, of little danger.—I. G.

N.—Power Generating and Equipment

Value of Fuel Economizers in Paper Mill Operation.—G. E. Williamson and G. C. Derry. *Paper Trade J.*, lxxiv, No. 18, 52-55 (May 4, 1922).—The advantages of fuel economizers are discussed in detail, and operating figures are given to show the economy effected by such an installation. The method of cleaning the apparatus, of caring for it, etc., is described in detail.—I. G.

Identity of the Cellulose of Different Plant Materials.—F. Heuser and E. Boedeker. *Z. angew. Chem.*, xxxiv, Aufsatzteil, 461-464 (1921).—Abridged translation by C. J. West in *Paper Trade J.*, lxxiv, No. 5, 47-48 (Feb. 2, 1922).—Contrary to the views of earlier writers, the authors propose that there is only one cellulose, from whatever source derived, and that it is represented by the formula $(C_6H_{10}O_5)_n$. The identity of straw and cotton cellulose has been established and it is now shown that wood cellulose is identical with these two. Bleached wood pulp was freed of resin and fat by extraction with benzene and alcohol, and then extracted thrice with boiling 6 per cent caustic soda (or with 17 per cent in the cold), whereby the pentosan content was decreased from 4.06 to 1.92 per cent. At the same time the ash content was reduced from 0.52 to 0.40 and the copper number from 4.10 to from 0.8 to 0.9. Thus, the principal impurity is the pentosan content. This can be nearly completely removed by repeated extraction so that a substance finally remains with the formula $(C_6H_{10}O_5)_n$. Upon hydrolysis by means of concentrated hydrochloric acid, the maximum dextrose reading was obtained in 16.5 hours. 94 per

cent of dextrose was actually isolated from the hydrolysis product and identified as the osazone. Comparative experiments were carried out with cotton cellulose, with similar results.—A. P.-C.

Relationship of Levo-Glucosan to Dextro-Glucose and to Cellulose.—J. C. Irvine and J. W. H. Oldham. *Chem. Soc. Trans.*, cxix, 1744-1759 (1921).—Levo-glucosan is shown to be 16 beta-glucose anhydride and hence may be termed beta-glucosan. There is no structural relationship between cellulose and beta-glucosan. By the identity of the methylated glucose derived from trimethylcellulose with that from cellobiose it is shown that the cellobiose residue is an integral part of the cellulose molecule.—A. P.-C.

Forestry

Note on a Stand of Parasol Trees in the Neighborhood of Ganda-Sundi.—M. Goosens. *Bull. Agric. Congo Belge*, xi, 74-79 (1920); *Botan. Abs.*, ix, 191 (Oct., 1921).—The parasol tree (*Musanga Smithii*) grows very readily in forest clearings and abandoned plantations. Various uses for it are suggested. It is particularly suited as a raw material for paper making and would probably prove remunerative if cultivated for this purpose.—A. P.-C.

Tree-Felling Saw.—U. S. A. Patent 1,414,319, A. Zaiauskis, April 25, 1922.—The patent covers a power-driven horizontal circular saw. A clutch mechanism makes the saw advance or recede and an automatic control is provided for throwing out the clutch when the cut is nearly completed. A spring-pressed pusher is provided to press against the tree and start the fall when the cut has been made sufficiently deep.—A. P.-C.

Hoisting Apparatus for Raising Sunken Logs.—U. S. A. Patent 1,406,714, A. J. Zipp, Feb. 14, 1922.—Two scows are rigidly connected together, with a suitable space between them. A hoisting drum is mounted on these scows so as to be over the open space and is driven from the engine driving the scows. The logging grapples described in U. S. A. Patent 1,266,650 of May 21, 1918, are used to catch the logs.—A. P.-C.

Timber Miners or Timber Farmers?—Edward Richards. *The Nation. Pulp and Paper*, xx, 195-196 (March 16, 1922).—A brief discussion of the urgent necessity for carrying out lumbering operations in such a manner that forest lands will be left in a productive condition; i. e., lumbering should be carried out as a harvesting operation, not as a mining operation.—A. P.-C.

Washington as a Source of Pulp Wood.—Andrew Lind. *Pulp and Paper*, xx, 219-220 (March 23, 1922).—An analysis of the sources of pulp wood within the State of Washington, showing that there is sufficient pulp wood in the Gray's Harbor-Puget Sound region to produce 300,000 tons of pulp annually for an indefinite period.—A. P.-C.

Report of the Norwegian Forest Service.—*Indeberet. Norske Skoger*, 1919. 1-130; *Botan. Abs.*, ix, 188 (Oct., 1921).—A very complete and comprehensive report of the Director for the calendar year 1919 is presented, setting forth all forest activities in the different districts.—A. P.-C.

New Zealand Waste Timber for Paper Making.—See A-1.

Groundwood Manufacturing and Equipment

Bleached Groundwood.—A. O. Bragg. *Paper*, xxx, No. 8, 7-10 (April 26, 1922).—Notes on the grinding conditions required for the production of groundwood to be bleached, the method of applying the bisulphite solution, the precautions which must be taken, the effects of excess bleach, the necessity for control of the bleach liquor, and the method of bleaching purchased pulp.—A. P.-C.

Bleaching, Bleach Manufacturing and Equipment

Electrolytic Manufacture of Caustic Soda by the Bell Process.—M. Yasuda. *J. Chem. Ind. (Japan)*, xxiv, 1006-1022 (1921); *J. Soc. Chem. Ind.*, xl, 845A (Dec. 15, 1921).—Experiments were

made with an electrolyzer constructed on the bell system, a small and short inverted porcelain box containing a small iron plate as cathode being set at an inclination of 12 to 13° to the horizontal. The hydrogen bubbles flowed along under the inverted cathode, and were discharged to outside the bell from the opening in the inclined bottom. With a current of 3 amperes per square decimeter of horizontal cross section of the bell and 4 volts or more a concentration of 130 to 140 grams per liter was obtained, as compared with 80 grams by the usual method. In tests extending over 59 days with 24 cells in series using 110 volts and 120 amperes the following average results were obtained: Current yield 83.68 per cent, energy for 1 pound of sodium hydroxide 1.69 kilowatt hour, concentration of sodium hydroxide 130.78 grams per liter. A. P. C.

Method of Controlling the Discharge from Electrolytic Cells.

—U. S. A. Patent 1,410,681 H. C. Jenkins, March 28, 1922. The control is effected by a rise in level in a feed tank when electrolyte (or other liquid) is fed from an external source. The feed tank communicates with a second chamber containing a valve operated by a float which can be suitably weighted so as to follow the changes of level in the feed tank by a greater or lesser amount. Normally the liquid is discharged from the cell by overflow over a separate adjustable weir. The lifting of the valve allows the discharge of part or the whole of the cell contents independently of the overflow discharge over the weir. A. P. C.

Method and Apparatus for Producing Alkaline Hypochlorites.

—U. S. A. Patent 1,414,059, L. D. Vorce, April 25, 1922. The invention consists essentially in treating a solution of caustic alkali preferably dilute, with chlorine and maintaining the temperature of the solution under treatment at a point below that at which salt and chlorate are formed in undue proportions (not above 30° C. and preferably below 25°).—A. P. C.

General Equipment

Electricity in the Paper Mill.—R. W. Jepper, Management Engineering and Development Co., Dayton, Ohio. *Paper*, xxx, No. 7, 24-28 (April 19, 1922).—A complete description of the electrical equipment of a two machine mill in which the entire power heating and drying demand has steam as the initial energy and which has a normal daily production of 75 tons of book paper.—A. P. C.

Modern Lighting for Paper and Pulp Mills.—J. H. Kurlander, Edison Lamp Works, Harrison, N. J. *Paper Trade J.* lxxiv, No. 15, 195-211 (April 13, 1922).—A discussion of the problem of lighting in pulp and paper mills, describing various types of equipment put out by the Edison Lamp Works and illustrating its application in pulp mill, beater room, machine room, and finishing room.—A. P. C.

Pumps and Their Characteristics.—E. F. Doty. *Pulp and Paper*, xx, 5-8, 27-30, 89-90, 101-104, 117-120, 137-140, 158-160, 177-178, 201-203, 225-228, 249-251 (Jan. 5 to March 30, 1922). *Paper Trade J.*, lxxiv, Nos. 1 to 9 (Jan. 5 to March 2, 1922). A preliminary publication of material on pumps and pumping machinery to be revised and used in the text-books published by the Canadian and American pulp and paper industries.—A. P. C.

Weighing Apparatus for Liquids.—U. S. A. Patent 1,412,410, C. I. Lindau, April 11, 1922.—The machine is very much along the same lines as the Allen Wightometer. See F. J. Trumbey, this journal, lxxiii, No. 8, 46 Aug. 25, 1921.—A. P. C.

General

Figuring Costs When Production Is Below Normal.—P. H. Huot, Laurentide Co., Ltd. *Pulp and Paper*, xx, 155-157 (March 2, 1922).—A discussion of the methods of determining idle time costs (by fixed percentage or amount, by analyzing every element and item of cost, by distributing and charging off expenses on basis of normal production), of the different methods of charging them off (selling or administration expense, total cost of sales, special

item, etc.), and of the importance and usefulness of determining them.—A. P. C.

The Technical Man's Duties.—A. B. Green, Lincoln, N. H. *Paper*, xxix, No. 7, 9-11, 18 (Oct. 19, 1921).—The technical man's duty consists in solving those problems which are necessary in order to enable the management to lay out the how to give the workman an instruction card which puts him in possession of the best method known to date. He should search for the one best method of doing a thing in its entirety, including the phases of working instructions, plant routing, storage, accounting equipment, selection of personnel, etc.—A. P. C.

List of Abbreviated and Full Titles and of Addresses of the Journals From Which Abstracts Have Been Prepared for This Issue

Ber.	Zeitschrift für deutsche chemische Gesellschaft 1, Offenbach, Elmhofstr. 67, Berlin, S. O. 36, Germany.
Botan. Abs.	Botanical Abstracts, Williams and Wilkins Co., Mount Royal and Guilford Avenues, Balti- more, Md.
Bull. Agric. Congo Ledge.	Bulletin Agric. du Congo Belge, Direction (Agriculture) du Ministère des Colonies, 7 Rue Thérèse, Brussels, Belgium.
Bull. Imp. Inst.	Bulletin of the Imperial Institute, John Mur- ray, Albemarle St., W. London, England.
Chem. Ab.	Chemical Abstracts, Charles J. Parsons, 1709 G. St. N. W., Washington, D. C.
Chem. Soc. Trans.	Journal of the Chemical Society (London)— Transactions, Guiney & Jackson, 43, Patern- oster Row, London, E. C. 4, England.
J. Chem. Ind. (Japan)	Journal of Chemical Industry (Japan), T. Miki, Kogyo Kagaku Kwan, Idemachi Koji, Machiku, Tokyo, Japan.
J. Soc. Chem. Ind.	Journal of the Society of Chemical Industry, Central House, 46 and 47, Finsbury Square, London, E. C. 2, England.
Paper.	Paper, 51 West Nineteenth St., New York City.
Paper Trade J.	PAPER TRADE JOURNAL, 101 E. Thirty-Ninth St., New York City.
Pulp and Paper.	Pulp and Paper Magazine, 1 Canada Garden, Vancouver, Canada.
Zeitschrift Chem.	Zeitschrift für angewandte Chemie, Verlag für anorganische Chemie, G. m. b. H., Nürnberger Str. 45, Leipzig, Germany.

Better Pulp and Paper Demand in Norway

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 2.—The demand for sulphate pulp in Norway was good throughout May, the United States, France, Belgium and Italy being the principal buyers, according to a report received by the Department of Commerce from the Consul General at Christiania. The report continues:

For a time, prices declined but towards the end of the month, due to the large sales of bleached sulphate, prices assumed a definite upward trend.

"Many transactions in kraft pulp took place and kraft prices are now above unbleached sulphate prices. In general, prices seem to be firm.

"Recent demands for paper have been quite lively. It is said that German paper manufacturers are refusing to accept orders except on condition that the price be determined upon when the paper is delivered. French and South American buyers have therefore again turned to Scandinavia to cover their requirements in news print better qualities of writing paper and of printing paper.

"For the time being, inquiries from the Far East have fallen off, which is said to be a result of political conditions in China, the buyers having assumed a reserved attitude.

"In kraft paper, transactions were lively and most of the paper mills are well provided with orders."

Receiver for Halltown Paper Board Co.

CHARLESTOWN, W. Va., July 31, 1922.—Three receivers were appointed last week by Circuit Court Judge J. M. Wood, to conduct the affairs of the Halltown Paper Board Company, at Halltown, near here. The plant will continue its operations.

SOME INTERESTING SIDE LIGHTS ON TARIFF HISTORY

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 2 1922—During the discussion of the tariff last week the question of news print was injected in regard to the Payne Aldrich bill by Senator McCumber, chairman of the Finance Committee.

Why Taft Was Defeated

Senator McCumber said Mr. Taft's defeat was due to a combination of the newspapers of the country against him following the refusal of the Senate Finance Committee to put news print paper on the free list. He said a committee of newspaper publishers came to Washington while the bill was under consideration and threatened to "wreck the Administration" if duties were levied on news print paper. This purpose afterwards was carried out, he said.

This statement by Senator McCumber long delayed the scheduled vote on the pending Taft amendment limiting duties on news print paper to 60 per cent ad valorem. Bits of secret history were revealed. A quorum remained continuously in the Senate for the first time in many weeks.

Senator Robinson challenged Senator McCumber's statement and called for the facts to establish a newspaper conspiracy to "wreck the Administration" unless print paper was admitted free of duty. He called for the names of the publishers' committee. He wanted to know whether the threat was made in open or secret session and all other facts connected with it.

Senator Stanley followed Senator Robinson with a speech declaring that the newspapers of the country had been impeached in the Senate of the United States by the acknowledged spokesman of the Republican Party.

John Norris Would Not Compromise

Senator Smoot made the reply to Senator Stanley and Robinson. He said he and Senator Aldrich had been named a Sub-committee of the Finance Committee which sought to reach a compromise with John I. Norris, the representative of the American Newspaper Publishers' Association, on the news print duty.

He quoted the late Mr. Norris as having said at the conclusion of the conference:

"I will not consider a compromise of any kind. We demand free print paper and if I had the power I would lay a tribute upon the manufacturers of news print paper. If a duty is placed upon news print paper the Republican Party will be driven from power."

Senator Robinson asked whether Senator Smoot agreed with Senator McCumber that a newspaper conspiracy was responsible for Mr. Taft's defeat. Senator Smoot replied that there were many other causes. He said he did not believe Mr. Norris had been authorized by the newspapers of the country to make the statement he did.

Cannon Did Not Want to be President

To throw additional light upon the situation existing at the time Senator Watson told of a series of events that took place while he was a member of the Ways and Means Committee and Republican whip of the House.

He said a resolution was introduced by Senator John Sharp Williams, then Democratic leader in the House, providing for the importation of news print free of duty. The Ways and Means Committee did not take the resolution seriously. It was voted down. Publishers, however, took the resolution very seriously and flocked to Washington to secure its enactment.

They went to Speaker Cannon with a proposition that he recognize Mr. Williams for the purpose of bringing the resolution up for consideration. Senator Watson said he was living with Mr. Cannon at the time. He told of a call upon Mr. Cannon by Her-

man Ridder, then President of the American Newspaper Publishers' Association, in the course of which Mr. Ridder said:

"If you will allow this resolution to come up you will be made President of the United States."

Several days later, according to Senator Watson, Mr. Ridder came to Mr. Cannon's office and stressed the necessity of passing the Williams resolution if the Republican Party was to secure newspaper support.

Again Mr. Ridder said in his presence that Mr. Cannon would be made President of the United States if he would allow the resolution to come up. The publishers would hold a banquet for Mr. Cannon at Washington. Mr. Ridder said at which the Cannon boom would be launched.

Mr. Cannon recalled to Mr. Ridder the Biblical story of one individual who took another up into a mountain and promised him all the earth if he would fall down and worship him.

Mr. Cannon refused to allow the resolution to come up.

Then Mr. Speaker Mr. Ridder was quoted as saying, "we will destroy you. You will never be Speaker again. You will never be re-elected. The Republican Party will be destroyed."

Thereupon Mr. Cannon called his attendant and told him that if Mr. Ridder ever came into his private office again to "throw him out."

When the tariff bill came up for consideration later, Senator Watson said Mr. Ridder's threat many times was reiterated to members of the Ways and Means Committee. Nevertheless, a duty of \$2 a ton was placed upon print paper. And the publishers carried their threats into execution.

The Swedish Pulp and Paper Market

WASHINGTON, D. C., August 2 1922—According to information reaching the Department of Commerce, Swedish paper manufacturers have been forcing the prices down until there is little margin of profit left for the sulphite mills. However, these prices now seem to have reached their lowest level and an upward movement is expected. Quotations in June were 300-325 kronen for bleached sulphite 195-210 kronen for easy bleaching sulphite and 180-200 kronen for strong sulphite f o b Swedish ports.

About 20,000 tons of Swedish sulphite have recently been sold in the United States from consignment stocks. The price was \$3.90 to \$4.10 per 100 lbs. ex dock for bleached sulphite and \$2.50 to \$2.60 for strong sulphite.

The market for sulphite pulp has been quiet although the future looks bright. Several orders have lately been received from France and Belgium. Prices hold firm at about 200 kronen per ton for kraft pulp and 205 kronen per ton for easy bleaching sulphate f o b Swedish ports. The price of consignment stocks in the United States is \$2.65 to \$2.75 for kraft pulp.

Both dry and wet groundwood pulp have experienced a slightly increased demand. Nevertheless, prices have not shown the rising tendency that has been hoped for. Prices for wet pulp remain unchanged at about 60-63 kronen per ton f o b Gothenburg and 57-58 kronen per ton f o b Gulf of Bothnia. Some sales of dry pulp at 120-130 kronen per ton f o b Gothenburg have been made to France and Spain.

Donnacona Co Shipping by Boat

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 31 1922—The policy of shipping all possible pulp and paper mill products by water is extending. The Donnacona Paper Company of Donnacona, Que., is now sending all its production to New York by boat. This is proving cheaper, and obviates possible delays by railway strikes. Other companies are now having special power barges built for the same purpose.

Recent Incorporations

NEW ENGLAND PAPER COMPANY, Boston, Massachusetts; paper and paper products. Capital, \$50,000. Incorporators, William H. Smith, Kenneth M. Walters and Carl McK. Eldridge, all of Boston.

COLORTONE PRODUCTS, Manhattan, New York, stationers, etc. Capital, \$50,000. Incorporators, S. B. Howard, H. C. and S. C. Wood. Attorney, S. Ryan, 65 Cedar street.

STANDARD FIBRE COMPANY, Wilmington, Delaware. To buy and sell fiber products of all kinds. Capital, \$100,000.

EXPERT PAPER BOX MANUFACTURING CORP., Manhattan, New York. Capital, \$5,000. Incorporators, M. Finkelstein, D. Pakowsky, J. Kossover. Attorney, N. Waxman, 321 Broadway.

Concerned About Coal in Miami Valley

DAYTON, Ohio, July 31, 1922.—It is barely possible that the coal and railway strikes will be adjusted before great havoc is wrought in the paper and allied trades of Dayton and other manufacturing centers of the Miami Valley.

At no time was the situation more critical than during the past week when it appeared that several of the largest industries of the valley would be tied up. While July and August are proverbially the dullest months in the year, business conditions were just assuming an aspect of interest when the two strikes injected their drawbacks and embarrassments.

During the past few days, the supplies of coal were so small here that but for the reserve stocks of the Dayton Power and Light Company, serious consequences would have followed. This large power plant, located at Millers Ford, on the Great Miami river, south of Dayton, furnishes motive power and electrical current for other purposes to a number of the Miami Valley's industries, both north, south and east of this city. Recently, several of the most important paper industries contracted with the company for power.

Reports from Xenia show that the Hagar Straw Board and Paper Company has sufficient coal for a fortnight at the expiration of which time it can operate on the Dayton Power and Light Company's service, it is stated.

The Hooven & Allison cordage plant at that place has a more ample supply, an official stating the works could be run for two months. The R. A. Kelly twine and cordage works uses power from the Dayton concern and does not consume much coal.

The same conditions prevail in Dayton, Hamilton and Middletown. In all of these places, as well as Franklin and Piqua and Troy, a number of plants depend upon the Dayton power plant whose lines extend for a distance of fifty to sixty miles. The company is preparing for an important enlargement involving a huge expenditure, which will be greatly to the advantage of paper mills, machinery establishments and kindred plants.

G. H. Carter Makes Report on Paper and Printing

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 26, 1922.—In submitting the first annual report of the Permanent Conference on Printing to the Director of the Budget, George H. Carter, Public Printer and chairman of the conference, states that there has been a saving to the government through the working of the conference of \$326,000 for the fiscal year and he estimates that if the recommendations of the committee are adopted for economy that the "expenditures for printing and binding could be reduced at least half a million dollars annually without in any way impairing the efficiency of the service."

The report has the following to say regarding the standardization of paper:

The standardization of paper for the public printing was discussed by the conference, but, inasmuch as the Joint Committee on

Printing is charged by law with the duty of fixing upon such standards, no action was taken thereon further than to accept an invitation courteously extended by the Joint Committee on Printing to designate a representative of the conference to act as a member of the special committee which has been directed to prepare specifications for the consideration of the Joint Committee on Printing in determining standards of paper for the public printing and binding for the year beginning March 1, 1923. The conference heartily appreciates this fine spirit of co-operation and formal recognition for the first time of the interest which the executive departments and establishments have in the kinds and grades of paper to be procured for such printing as they may order from the Government Printing Office. F. F. Weston, of the Treasury Department, was designated by the conference as its representative on the paper-specifications committee, which has functioned under the authority of the Joint Committee on Printing for many years.

Interest in Purifying Streams in New York

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., July 31, 1922.—Paper manufacturers as well as officials of cities and communities in the Black River valley are much interested in the move being made in the state of Wisconsin to eliminate the river pollution caused by the paper and sulphite plants along the shores. The sportsmen of this section are also taking a keen interest in the matter. If effective means of purifying the water are discovered in the paper manufacturing centers of Wisconsin, it is felt that action will follow in this state.

It is proposed to have the state appropriate funds to employ a chemist who will make chemical analysis of waste from paper mills and other industrial plants to determine a method of neutralizing the poisons that are killing the fish and polluting the water for domestic use. If a remedy is found, it is proposed to pass a law that will compel mill owners to use it or be subject to a fine of \$5,000 and \$100 a day for each day the waste is dumped into the river.

For several years the many paper mills along the Black River have released waste material and acids into the river until practically no fish remain and the water cannot be used until given expensive treatment. Unsuccessful efforts to discover remedies have been made from time to time. It is believed that should Wisconsin be successful in correcting the evil this state would follow suit to the benefit of many communities along the rivers of Northern New York.

Eastern Mfg. Co. Passes Dividends

[FROM OUR REGULAR CORRESPONDENT]

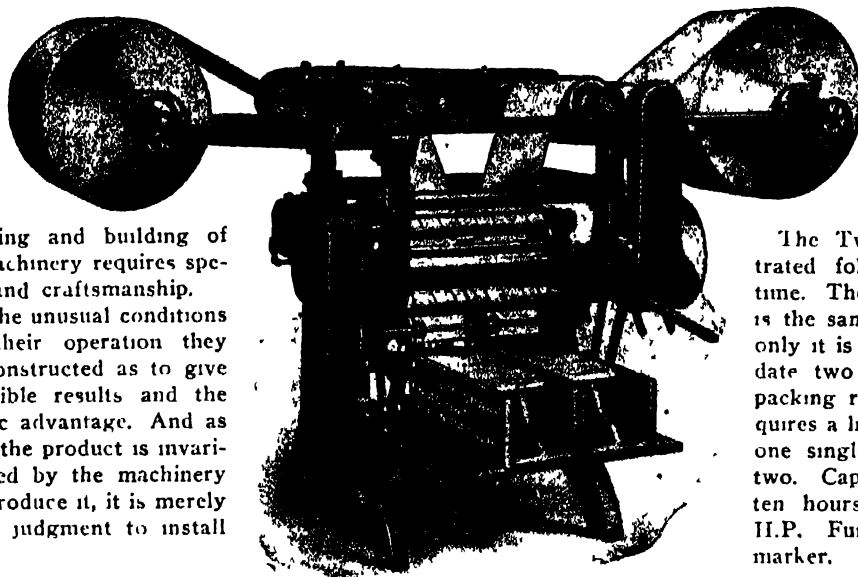
BANGOR, Me., August 1, 1922.—While American pulp importers are increasing facilities for importing pulp from Sweden and other countries, at least one Maine pulp company has had to pass dividends on account of the low price obtained for pulp. The Eastern Manufacturing Company of Bangor announces to its stockholders that dividends cannot be paid August 1, adding:

"Paper sales have resulted in substantially full operation of the paper mills at a profit, but declining prices of sulphite pulp and small volume has resulted in a loss on this business more than offsetting the profit on paper. The usual depreciation reserve amounting to \$160,000 for the year to June 17 has been set up, after which there is a consolidated operating loss of \$66,000. This, however, is after extraordinary items amounting to more than the loss. Last year we charged down our pulpwood, which we are continuing to carry at about \$3.00 per cord less than our replacement cost. Expenses have been materially reduced and further reductions are in progress. While it is hoped and expected that the paper and pulp business will return to more nearly normal conditions in the near future, it does not seem advisable to continue the payment of dividends that are not earned."

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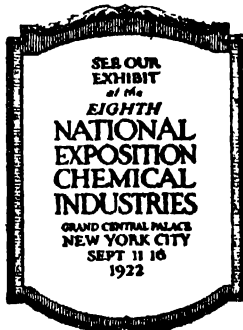
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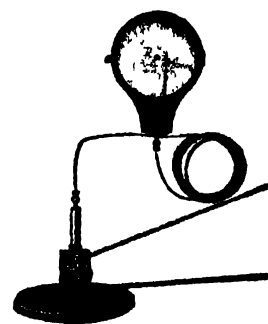
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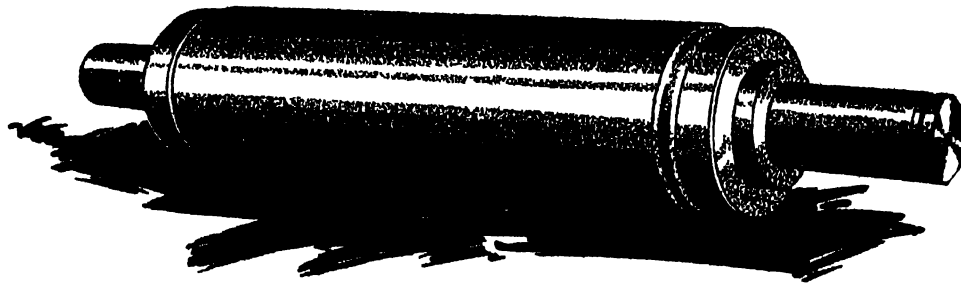


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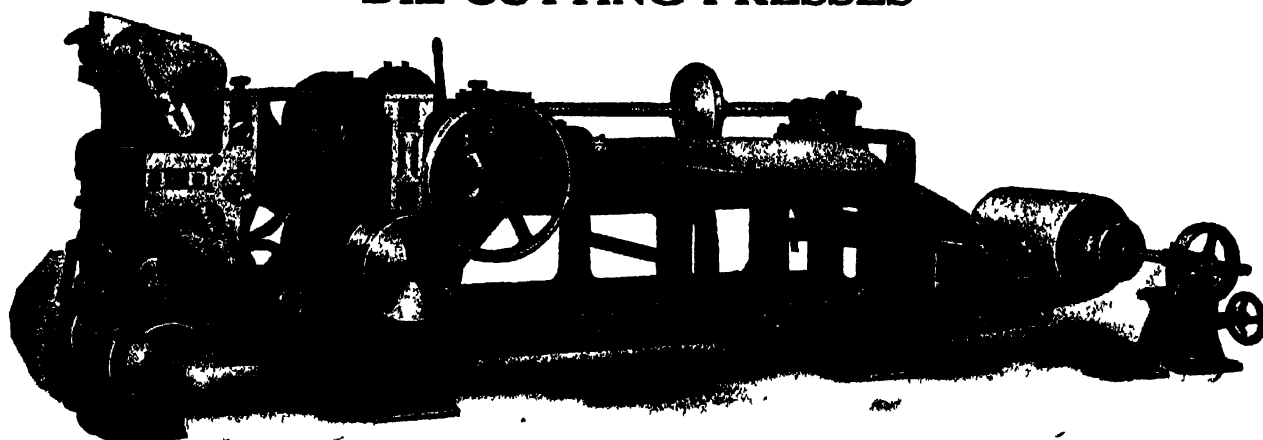
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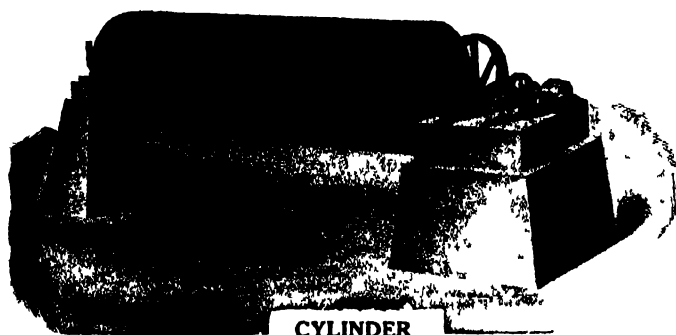
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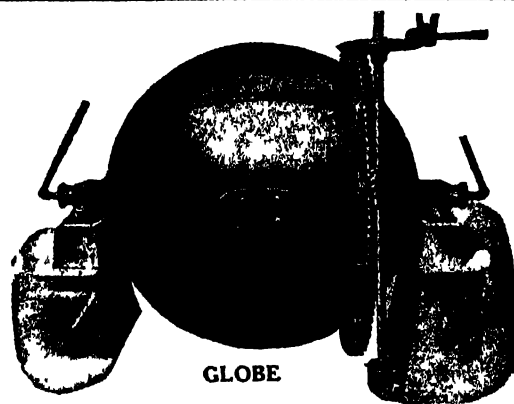
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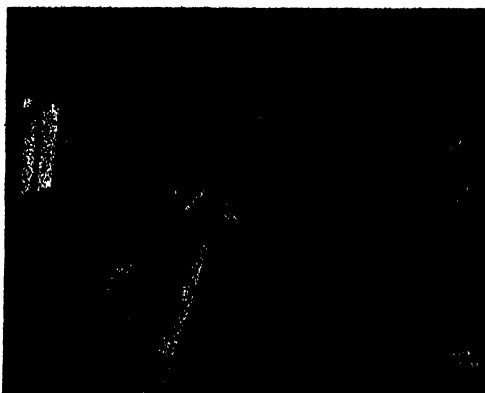
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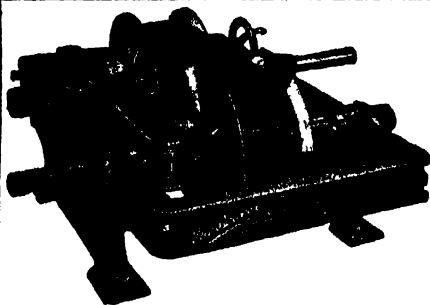
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HOOSIER—No. 164,327. C. P. Lesh Paper Company, Indianapolis, Ind. For paper and envelopes.

SECRETARY within open space on lined upright rectangle.—No. 164,306. J. C. Blair Company, Huntington, Pa. For paper for writing and printing purposes, drawing paper, pencil paper, envelopes for correspondence, writing, pencil, drawing, and spelling tablets, and blank books.

CROMWELL BOND—No. 122,018. Michael Milton, doing business as Milton Paper Company, New York City. For writing paper.

T in center of letter C. No. 157,592. The Tribune Company, Chicago. For sheet paper for printing and writing.

CARDEVAN—No. 159,191. Van De Carr Paper Company, Stockport, N. Y. For paper for wrapping and packing purposes.

MORWARE within a diamond—No. 159,222. Minnie L. Stoughton, Camden, N. J. For book covers.

MANCO—No. 163,280. William Mann Company, Philadelphia, Pa. For checks, check-book cases and check-book covers, and safety paper.

IPCO—No. 164,166. International Paper Company, New York City. For paper used for writing and printing purposes.

RAPWELL in white letters on black panel across circle bearing C.F.H. Co. and Kraft.—No. 164,250. Charles F. Hubbs & Co., New York City. For wrapping paper.

Report on Brompton Co.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 31, 1922. R. O. Sweezy, consulting engineer for Greenshields & Company, members of the Montreal Stock Exchange, has just completed a special report on the company which has been sent out to shareholders. Mr. Sweezy says that there is no reason to doubt the company's ability to earn from \$1,250,000 to \$1,750,000 yearly under normal conditions. At present working capital is depleted by shrinkage in inventory values, but only about half the working capital that was necessary in 1920 should now be ample with raw materials as they are today. The building up of substantial liquid reserve should be the aim of the company during the next couple of years.

Taking as a basis figures laid down by the Federal Trade Commission of the United States in 1917, showing pulp and paper mills set down at \$50,000 per daily ton capacity for finished paper product or for chemical pulp, Mr. Sweezy allows \$40,000 per daily ton of paper instead of the 1917 valuation values groundwood at \$8,000 per daily ton capacity, and makes the following valuations:

Timberlands	\$10,900,000
360 tons at \$40,000	14,000,000
50 tons at \$8,000	400,000

Total net value\$25,700,000

To these figures should be added the net liquid assets, the Groveton mill and the Claremont Mill.

He continues: "In considering the company's last financial state-

ment, it is important to note that inventories are small, as compared with most other mills, and have been fully written down to present day replacement costs. According to the last balance sheet as at October 31, 1921, fixed assets are carried at a valuation of \$13,118,617."

He suggests various improvements at the mill, and says within twelve months the company should be making average profits of \$10 to \$15 a ton on the annual salable production of 123,000 tons. He considers striking the fact that they own 2,000,000 cords of standing pulpwood on their freehold forest lands which lie in proximity to the mills. Of this quantity 1,500,000 cords are held in fee simple. The company is also favored in being able to buy as and when wanted all wood cut in settlers' lands.

To Go with Union Paper and Twine, Detroit

[FROM OUR REGULAR CORRESPONDENT]

DETROIT, Mich., July 31, 1922.—Announcement has just been made by the Union Paper and Twine Company, Detroit, Mich., of the appointment of Chas. R. Heeter as sales manager.



CHARLES R. HEETER

Mr. Heeter has had charge of the warehousing activities of the Seaman Paper Company of Chicago for some time and leaves his present connection to acquire an interest in the Detroit organization.

Mr. Heeter's paper experience covers a period of eleven years, both in sales and executive capacities. He has a wide acquaintance with the trade in Detroit having lived there for a number of years.

Drought in Northern Quebec

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., July 31, 1922.—Persistent drought in the Abitibi region, the upper St. Maurice, Temiskamingue, and Lake St. John regions since the beginning of June is now causing fear to the officials of the Quebec Department of Lands and Forests. Gustave Piche, Chief Forestry Engineer, states that though no forest fires have been reported in either of the districts, orders have been issued to the forest wardens to enforce the regulations very severely. In an interview he said that compared with last year the conditions now are extraordinarily good, as not a single forest fire had been reported for two weeks. Regarding the estimates of the losses this year compared with last year, he stated that they would be only about one third of what they had been in the St. Maurice district.

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Chicago Office
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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, AUGUST 1, 1922.

At the time of going to press every metropolitan newspaper confidently anticipated a close to rail strike before the end of this week, and current press dispatches tell of over a million tons of coal being on the way here from England. These two strikes have been more keenly felt in paper manufacturing circles during the past week than ever before. In some places what little coal is available is being turned over at ridiculously high prices and the railroad tieup is hitting those mills hard that are far removed from sources of raw materials and markets for their products.

It is further announced that the Senate expects to pass the McCumber-Fordney tariff bill within the month. Contrary to rumors which had it that this bill would be held up until after fall elections, Republican leaders now declare that the bill will be pressed through before August 30.

Paper conditions in the New York market have improved, if anything, during the last week. News print is still going full speed, wood pulp is in strong demand and the board market is as firm as it ever was in 1920. Paper stock is in excellent demand and there has even been an apparent improvement in the twine market. Tissue mills are operating to capacity and coated paper manufacturers are only handicapped by the casing shortage. Kraft is only enjoying a fair amount of activity but book and fine papers have not shown much progress of late.

Publishers are now heeding the warning of news print manufacturers and are laying in ample supplies of the commodity before another price advance takes effect. Such a rise is generally expected soon and has been predicted by leading manufacturers of print paper. Continuing at the present production speed, Canadian and United States news print mills should produce close to 2,500,000 tons of the commodity before the year is over. The highest previous year was 1920, when 2,395,000 tons was the combined output.

Book paper is still rather sluggish in movement although there is a steady week-by-week improvement in the general tone of the market. Stocks in the hands of consumers are still at a very low level and manufacturers are eagerly awaiting the time when the inevitable stocking up will come. From all appearances business should undergo a decided revival in the early months of the fall.

Fine paper is picking up in demand but exports have been at a low water mark for several weeks. Small amounts of high-grade sulphite bonds as well as many of the cheaper grades of fine paper are finding their way into consuming channels, but the market is not characterized by the stimulus of active buying.

Tissue is sailing along without any apparent interruption, and it is hard to conceive of a more substantial condition existing even when fall arrives. Some mills are sold up as far as three months in advance, and while prices are quite firm for the present they are expected to advance in the near future.

Coal shortage is still hampering many of the smaller kraft wrapping paper mills, especially bogus mills, but this curtailment in production has served to stimulate the demand considerably and strengthen the tone of the market. Prices have been on the ascendant ever since coal began to advance and this situation will be apt to prevail until some time after the strike is settled.

Straw board quotations have practically been withdrawn by many companies and container board is quoted nominally at \$67.50 to \$70. Board, as a whole, is in excellent condition, producers having a hard time to meet the demand of consumers. Paper stock has continued to soar in price and this has been reflected in the trend of board prices. Some mills are reported to be sold up for the next two months, but due to the abnormal coal conditions which have created a market equal to that of 1920, the majority of mills are only taking business on the basis of each individual transaction.

Mechanical Pulp

There has been a general increased demand for groundwood in recent weeks, due partly to the decreasing production of grinders on account of low water and partly to the certainty, which exists in the minds of both manufacturers and buyers, that there will be an even greater scarcity of ground wood in the near future. This has had the psychological effect of causing them to prepare for such a shortage, hence the stimulated demand. The best authorities on mechanical pulp anticipate a rise in prices in the not very distant future.

Chemical Pulp

According to dealers in chemical pulp, the demand for soda pulp is extremely acute. Two factors are given to account for this condition. First, old papers are now commanding such high prices that in many cases it is just as economical to use new soda pulp as paper stock, and second, there have recently been many large orders from book paper manufacturers. Prices of kraft pulp are steadying again following the drop which they took in the early part of the week. Better grades of sulphite pulp are in strong demand and the lower grades are steadily picking up.

Old Rope and Bagging

Old rope stiffened up slightly in several grades during the past week, mixed strings having advanced to eighty-five and ninety cents per cwt. on the average. Some dealers are asking as high as a dollar a hundred for mixed strings, and if the present demand continues this average will doubtless be reached in the near future. Nearly every grade of bagging shows slight advances, both foreign and domestic. No. 1 gunny having advanced to the dollar mark. Bright bagging is up as high as \$1.10 to \$1.25 and No. 1 scrap has moved to \$1.00-\$1.15. The general undertone of the market is strengthening.

Waste Paper

Waste paper continues to stiffen in the lower grades and those of the better grades, such as hard and soft white shavings, when they can be obtained, are in excellent demand. Flat stocks have increased all along the line, stichless now being quoted at \$2.00 to \$2.15 together with over issue magazine. Strictly folded news is up to \$.75 while common news is quoted at \$.40 to \$.45.

Rags

Roofing rags have advanced approximately ten cents on the hundred pounds while miscellaneous thirds and blues are listed at 1.45 to 1.55 cents. Nearly all grades of domestic rags are continuing their upward price trend, with the possible exception of a few miscellaneous grades such as washable shirt cuttings. New white No. 1 cuttings are quoted at 11.00 to 11.50 cents and new unbleached at 9.25 to 9.75. Foreign rags are easy, most grades still being quoted nominally.

Twine

India's short jute crop is just beginning to be felt in the New York market, and the resulting scarcity of many grades of twine has made for quite an improvement in the general situation. The market has a firm undertone and most dealers expect a thorough revival of business as well as a considerably stiffer price with the coming fall.

Thomas Beckett Heads Commerce Chamber

[FROM OUR REGULAR CORRESPONDENT.]

HAMILTON, Ohio, August 1, 1922.—Thomas Beckett, president of the Beckett Paper Company, Hamilton, one of the oldest establishments in the valley, has just been re-elected president of the Chamber of Commerce of Hamilton.

Mr. Beckett has served in this capacity for two years and in that period the Hamilton organization has moved steadily forward. The town has been placed on the map, in a sense.

S. M. Goodman, for many years identified in an important capacity with the Champion Coated Paper Company was elected treasurer.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations August 1, 1922:

	BID.	ASKED.
American Writing Paper Company, pref.	29 1/2	30
International Paper Company, com.	55	55 1/2
International Paper Company, pref., stamped.	71 1/4	71 3/4
Union Bag & Paper Corporation	60	63

Paper

F. o. b. Mill.

Ledgers	10.50	@ 30.00
Bonds	8.50	@ 55.00
Writings—		
Extra Superfine	14	@ 25
Superfine	13	@ 20
Tub Sized	10	@ 16
Engine Sized	9.00	@ 15.00

News—f. o. b. Mill—		
Rolls, contract	3.50	@ 3.75
Rolls, transit	3.75	@ 4.00
Sheets	4.00	@
Side Runs	3.25	@ 3.50
Book, Cased—f. o. b. Mill		
S. & S. C.	7.50	@ 9.00
M. F.	6.00	@ 7.50
Coated and Enamel	8.75	@ 15.00
Lithograph	9.00	@ 11.00

Tissues—f. o. b. Mill		
White, No. 1	.75	@ .80
Colored	1.00	@ 2.00
Anti-Tarnish	.75	@ .80
Silver Tissue	1.50	@ 2.70
Manila	.65	@ 1.00

Kraft—f. o. b. Mill—		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	5.50	@ 6.25
Imported	6.00	@ 6.25
Screenings	2.75	@ 3.50

Manila—		
No. 1 Domestic	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.50	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75

Fiber Papers—		
No. 1 Fiber	6.00	@ 6.25
No. 2 Fiber	5.00	@ 5.25
Common Bogus	2.15	@ 2.50
Card Middles	4.00	@ 5.00

Boards—per ton—		
News	42.50	@ 45.00
Straw	40.00	@ 45.00
Chip	45.00	@ 50.00
Binders' Board	60.00	@ 70.00
Spl. Mla. Ll. Chip	52.50	@ 62.50
Wood Pulp	75.00	@ 90.00
Container	67.50	@ 70.00

Wax Paper—		
Self Sealing White		
28 and 30 lb.		
basis	10.00	@ 11.00
Waxed Tissue	1.40	@ 1.60

Glassine—		
Bleached, basis 25		
lba.	12.75	@ 13.25
Bleached, basis 20		
lba.	13.75	@ 15.25

Mechanical Pulp

(Ex-Dock.)

No. 1 Imported	36.00	@ 38.00
No. 1 Domestic	28.00	@ 34.00

(F. o. b. Pulp Mills.)

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.30	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
No. 2 Strong unbleached	2.25	@ 2.50
No. 1 Kraft	2.40	@ 2.80

Sulphate—		
Bleached	3.90	@ 4.00

(F. o. b. Pulp Mill.)

Sulphite (Domestic)—		
Bleached	4.00	@ 4.50
Strong unbleached	2.60	@ 2.80
Easy Bleaching		
Sulphite	2.60	@ 3.10
News Sulphite	2.50	@ 2.80
Mitscherlich	2.80	@ 3.10
Kraft (Domestic)	2.50	@ 3.00
Soda Bleached	3.75	@ 4.00

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	11.00	@ 11.50
New White, No. 2	5.50	@ 6.50
Silesias, No. 1	6.25	@ 6.75
New Unbleached	9.25	@ 9.75
Washables	3.75	@ 4.00
Fancy	5.75	@ 5.50
Cotton—according to Grades—		
Blue Overall	6.00	@ 6.25
New Blue	4.25	@ 4.75
New Black Soft	5.50	@ 6.00
New Light Sec-		
onds	2.75	@ 3.00
O. D. Khaki Cut-		
tings	3.25	@ 3.60
Men's Corduroy	2.75	@ 3.00
New Canvas	7.00	@ 7.25
New Black Mixed	2.25	@ 2.75

White, No. 1—		
Repacked	6.50	@ 6.75
Miscellaneous	5.50	@ 6.00
White, No. 2—		
Repacked	3.00	@ 3.25
Miscellaneous	2.75	@ 3.00
St. Soiled White	1.40	@ 1.50
Thirds and Blues—		
Repacked	1.60	@ 1.75
Miscellaneous	1.45	@ 1.55
Black stockings	2.90	@ 3.15
Rooting Rags—		
Cloth Strippings	1.25	@ 1.30
No. 1	1.25	@ 1.30
No. 2	1.20	@ 1.25
No. 3	.85	@ .90
No. 4	.85	@ .90
No. 5A	1.00	nominal

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbleached Cottons	7.50	nominal
New White Cut-		
tings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cut-		
tings	2.00	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	9.00	@ 11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light		
Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cot-		
tons	1.50	nominal
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.10	@ 1.15
Shoppery	1.00	@ 1.05
French Blues	2.00	nominal

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.00	@ 1.10
Domestic	1.00	@ 1.10
Wool, Tares, light	1.15	@ 1.25
Wool, Tares, heavy	1.25	@ 1.40
Bright Bagging	1.10	@ 1.25
No. 1 Scrap	1.00	@ 1.15
Sound Bagging	.85	@ .95
Manila Rope—		
Foreign	5.75	@ 6.25
Domestic	6.00	@ 6.50
New Bu. Cut	2.00	@ 2.15
Hessian Jute Threads—		
Foreign	2.25	@ 2.50
Domestic	2.20	@ 2.40
Mixed Strings	.85	@ 1.00

Twines

Cotton—(F. o. b. Mill)		
No. 1	.35	@ .37
No. 2	.31	@ .33
No. 3	.27	@ .29

India, No. 6 basis—		
Light	.18	@ .19
Dark	.18	@ .19
B. C., 18 Basis	.39	@ .41
A. B. Italian, 18		
Basis	.51	@ .61
Finished Jute—		
Light, 18 basis	.26	@ .27
Dark, 18 basis	.27	@ .29
Jute Wrapping, 3-6		
Ply—		
No. 1	.23	@ .24
No. 2	.31	@ .32
Tube Rope—		
4-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India—		
Basis	.16	@ .17
Paper Makers Twine		
Balls	.13	@ .15
Box Twine, 2-3 ply	.17	@ .18
Jute Rope	.13	@ .15
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.90	@ 4.15
Hard, White, No. 2	3.50	@ 3.70
Soft, White, No. 1	3.50	@ 3.65
Flat Stock—		
Stitchless	2.00	@ 2.15
Over Issue Mag.	2.00	@ 2.15
Solid Flat Book	1.85	@ 1.90
Crumbled No. 1	1.45	@ 1.50
Solid Book Ledger	2.25	@ 2.50
Ledger Stock	1.90	@ 2.00
No. 1 White News	1.75	@ 1.85
New B. B. Chips	.65	@ .70
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cut No. 1	1.75	@ 1.90
Extra No. 1, Old	1.40	@ 1.60
Print	1.00	@ 1.05
Container Board	.75	@ .80
Bogus Wrapper	.60	@ .70
Old Krafts, machine compressed		
Bales	1.80	@ 1.90
News—		
Strictly Overissue	.75	@ .80
Strictly Folded	.67 1/2	@ .75
No. 1 Mixed Paper	.62 1/2	@ .67 1/2
Common Paper	.40	@ .45

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper		
F. o. b. Mill		
All Rag Bond	35	@ 40
No. 1 Rag Bond	30	@ 35
No. 2 Rag Bond	18	@ 20
Water Marked Sul-		
phite	10	@ 14
Sulphite Bond	9	@ 12
Sulphite Ledger	12	@ 13
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 22
No. 2 Fine Writing	12	@ 20
No. 3 Fine Writing	8	@ 12
No. 1 M. F. Book	6 1/4	@ 7
No. 1 S. & S. C.		
Book	6 1/4	@ 7 1/4
Coated Book	8 1/4	@ 10 1/4
Coated Label	8 1/4	@ 10 1/4
News—Rolls, mill	3 1/2	@ 4 1/2
News—Sheets, mill	3 1/4	@ 4 1/4
No. 1 Manila	5	@ 5 1/2
No. 1 Fiber	4 1/2	@ 5
No. 2 Manila	4	@ 4 1/2
Butchers' Manila	4	@ —
No. 1 Kraft	6 1/4	@ 7
No. 2 Kraft	5 1/4	@ 6
Wood Tag Boards	4	@ —
Screenings	2 1/2	@ —
Boards, per ton—		
Plain Chip	35.00	@ 40.00
Solid News	40.00	@ 45.00
Manila Lined		
Chip	45.00	@ 52.50
Container Line—		
85 Test	55.00	@ 60.00
100 Test	60.00	@ 65.00

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper		
Bonds	.10	@ .60
Ledgers	.15	@ .40
Writings—		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F.	.06	@ .09
Book, S. S. & C.	.08	@ .13
Book, Coated	.08	@ .13
Coated Lithograph	.10	@ .13
Label	.08	@ .13
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul. No. 1	.08	@ .08 1/2
Manila No. 2	.07 1/2	@ .08
No. 2 Kraft	—	@ .08 1/2
No. 1 Kraft	—	@ .09 1/2
Common Bogus	.02 1/2	@ .03
Straw Board	35.00	@ 45.00
News Board	32.50	@ 35.00
Chip Board	27.50	@ 32.00
Wood Pulp Board	90.00	@ 100.00

(Carload Lots)

Binder Boards—		
Per ton	\$65.00	@ 75.00
Carload lots	60.00	@ 65.00
Tarred Felts—		
Regular	48.00	@ 50.00
Slaters	54.00	@ 56.00

(Continued on page 70)

Best Tarred, 1-ply	1.35	@ 1.50
(per roll)		
Best Tarred, 2-ply	1.00	@ 1.15
(per roll)		
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.		
Gunny No. 1—		
Foreign	.75	@ —
Domestic	.70	@ —
Manila Rope	4.00	@ 4.50
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Bur-		
lap	.75	@ .80
New Burlap Cut-		
tings	1.75	@ 2.10

Old Papers

F. o. b. Phila.		
Shavings—		
No. 1, Hard	4.00	@ 4.25
No. 2, Hard	3.50	@ 3.75
No. 1 Soft White	3.35	@ 3.50
No. 2 Soft White	2.00	@ 2.25
No. 1 Mixed	1.50	@ 1.75
No. 2 Mixed	1.00	@ 1.25

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 29, 1922

SUMMARY

News print	4,826 rolls
Printing paper	728 rolls, 143 cs., 259 bls.
Cigarette paper	4,750 cs.
Filter paper	76 cs., 129 bls.
Drawing paper	87 cs.
Blue print	93 rolls.
Metal paper	6 cs.
Wall paper	35 cs., 4,329 rolls.
Hangings	31 bls., 3 cs.
Surface coated paper	72 cs.
Wrapping	106 bls.
Waxed	3 cs.
Tracing	333 cs.
Colored paper	22 cs.
Photo paper	41 cs.
Miscellaneous paper	89 bls., 103 cs., 767 rolls.

CIGARETTE PAPER

British American Tobacco Company, Laconia, Liverpool, 30 cs.
 British American Tobacco Company, Baltic, Liverpool, 18 cs.
 De Mauduit Paper Corporation, Vincent, Havre, 50 cs.
 De Mauduit Paper Corporation, Collauner, St. Nazaire, 152 cs.
 American Tobacco Company, Collauner, Bordeaux, 1,000 cs.
 American Tobacco Company, Niagara, Bordeaux, 360 cs.
 Kaufman Brothers & Boudy, by same, 8 cs.

FILTER PAPER

H. Reeve, Angel & Co., Niagara, Bordeaux, 81 bls.
 Magnus, Mabec & Reynard, by same, 3 bls.
 American Express Company, by same, 15 bls.
 H. Reeve, Angel & Co., Mackinaw, London, 360 cs.
 H. Reeve, Angel & Co., Mesaba, London, 7 cs.

DRAWING PAPER

H. Reeve, Angel & Co., Mackinaw, London, 16 cs.
 H. Reeve, Angel & Co., Finland, Antwerp, 6 cs.
 Keuffel & Esser, Mt. Clinton, Hamburg, 73 cs.

BLUE PRINT PAPER

Keuffel & Esser, Mt. Clinton, Hamburg, 93 rolls.

METAL PAPER

Irving National Bank, Mt. Clinton, Hamburg, 6 cs.

WALL PAPER

R. F. Downing & Co., Alaska Maru, Kobe, 34 cs.
 A. L. Diamant, Paris, Havre, 1 cs.
 F. G. Prager, Finland, Antwerp, 4,329 rolls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Mackinaw, London, 3 bls.
 W. H. S. Lloyd & Co., Mesaba, London, 17 bls.
 A. C. Dodman, Jr., Baltic, Liverpool, 6 bls.

WRAPPING PAPER

Blauvelt-Wiley Manufacturing Company, Elysia, Glasgow, 106 bls.

WAXED PAPER

R. F. Downing & Co., Aquitania, Liverpool, 3 cs.

TRACING PAPER

E. Dietzgen & Co., Minnekahda, Hamburg, 333 cs.

COLORED PAPER

P. C. Zuhlke, Minnekahda, Hamburg, 13 cs.
 Borden Riley Paper Company, Finland, Antwerp, 9 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Finland, Antwerp, 72 cs.

PHOTO PAPER

Genaert Company of America, by same, 41 cs.

PRINTING PAPER

H. Lips, Finland, Antwerp, 100 cs.
 P. Puttmann, by same, 23 cs.
 B. F. Driehfeld & Co., Laconia, Liverpool, 20 cs.
 Reddin & Martin, Northwestern Miller, London, 42 rolls.
 Parsons & Whittemore, Rio Grande, Helsingfors, 259 bls., 686 rolls.

NEWS PRINT

New York American, Rio Grande, Hattstaviik, 4,280 rolls.
 Hudson Trading Company, Caronia Stockholm, 546 rolls.

PAPER

J. Manheimer, Niagara, Bordeaux, 17 bls.
 Birn & Wachenheim, Paris, Havre, 30 cs.
 Whiting & Patterson, by same, 4 cs.
 Coenra Mottison Company, by same, 7 cs.
 Davies, Turner & Co., America, Genoa, 47 rolls.
 Chemical National Bank, Caronia, Hamburg, 546 rolls.
 Irving National Bank, Frederick VIII, Copenhagen, 62 bls., 93 rolls.
 F. C. Mully, by same, 81 rolls.

RAGS, BAGGINGS, ETC.

F. I. Keller Company, Inc., America, Bremen, 150 bls. rags.
 F. I. Keller Company, Inc., Chickasaw, Hamburg, 40 bls. rags.
 F. I. Keller Company, Inc., Mt. Clinton, Hamburg, 39 bls. rags.
 F. I. Keller Company, Inc., Stanmore, Dunlee, 30 bls. linen thread.
 Ladenburg, Thalman & Co., Stanmore, Leith, 34 bls. paper stock.
 Ladenburg, Thalman & Co., President Polk, London, 88 bls. paper stock.
 D. M. Hicks, Fred. VIII, Copenhagen, 68 bls. rags.
 F. I. Keller Company, Inc., by same, 530 bls. rags.
 Equitable Trust Company, Northwestern Miller, London, 243 bls. waste paper.
 International Purchasing Company, Paris, Havre, 54 bls. rags.
 Guaranty Trust Company, Elysia, Glasgow, 12 bls. paper stock.
 M. O'Meara Company, West Inskip, Antwerp, 231 bls. rags.
 Brown Brothers & Co., by same, 606 bls. rags.
 Castle, Gotthel & Overton, by same, 71 bls. rags.
 Castle, Gotthel & Overton, Chickasaw, Hamburg, 20 bls. rags.
 Burmon & Balousky, Niagara, Bordeaux, 134 bls. rags.
 Equitable Trust Company, Laconia, Liverpool, 75 bls. waste paper.

OLD ROPE

Brown Brothers & Co., Stanmore, Leith, 77 coils.
 Irving National Bank, Fred. VIII, Copenhagen, 61 coils.

WOOD PULP

Scandinavian-American Trading Company, Ausabla, Harnosand, 4,800 bls., 800 tons.
 National City Bank, by same, 3,870 bls., 645 tons.

Tidewater Papermills Company, Barnholm, Pt. au Lic, 9,000 bls.
 M. Gottesman & Co., Inc., Chickasaw, Hamburg, 650 bls.

CASEIN

Atterbury Brothers, Hyanthier, Buenos Aires, 667 bags.
 Bank of America, Mesaba, London, 255 bags.
 A. Klipstein & Co., Mackinaw, London, 1,000 bags.
 Equitable Trust Company, Canadian Constructor, Wellington, 980 bags.

BOSTON IMPORTS

WEEK ENDING JULY 29, 1922

Kidder, Peabody & Co., Mackinaw, London, 19 bls. thread waste.
 Lee, Higginson & Co., by same, 54 bls. thread waste.
 International Purchasing Company, by same, 163 coils old rope, 245 bls. old rope.
 Katzenstein & Keene, Inc., Belgian, Liverpool, 141 bls. new cuttings.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 29, 1922

Katzenstein & Keene, Inc., Binnendyk, Rotterdam, 302 bls. rags.
 Castle, Gotthel & Overton, by same, 467 bls. rags.
 Castle, Gotthel & Overton, Binnendyk, Amsterdam, 831 bls. rags.
 Baring Brothers & Co., West Inskip, Antwerp, 142 bls. rags.
 Dill & Collins, Northwestern Miller, London, 308 bls. waste paper.
 American Express Company, by same, 153 bls. waste paper.
 E. J. Keder Company, Inc., Mackinaw, London, 100 bls. rags.
 Ladenburg, Thalman & Co., by same, 107 bls. rags.
 F. K. MacAlpine & Co., Virginia, Gothenburg, 156 bls. paper, 260 rolls paper.

CLEVELAND IMPORTS

WEEK ENDING JULY 29, 1922

S. Silberman, Olen, Rotterdam, 109 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING JULY 29, 1922

Castle, Gotthel & Overton, Dorrington Court, Rouen, 1,255 bls. gunny.
 Castle, Gotthel & Overton, De La Salle, Rouen, 493 bls. rags.
 F. I. Keller Company, Inc., Carplaka, Antwerp, 501 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING JULY 29, 1922

M. Gottesman & Co., Inc., Honolulu, Stockholm, 3,000 bls., 508 tons wood pulp.
 Katzenstein & Keene, Inc., Binnendyk, Rotterdam, 43 bls. rags.
 Castle, Gotthel & Overton, Ninian, London, 57 bls. waste paper.
 Hudson Trading Company, Gothenburg, Tasaton, 4,200 bls. wood pulp.
 Hudson Trading Company, Gothenburg, Tasmanic, 3,000 bls. wood pulp.
 Hudson Trading Company, Gothenburg, Stureholm, 3,000 bls. wood pulp.

The **B** *Quality: It means more than price*
INC PULPS

"Hafslund Bear" **"Forshaga"**
 BLEACHED SULPHITE

"Klarafors"
 EASY BLEACHING SULPHITE

STRONG UNBLEACHED SULPHITE

"Hurum" **"Bamle"**
 EXTRA STRONG KRAFT; BLEACHED AND
 BLEACHABLE SULPHATE

"Edsvalla" 50% MOIST **"Dejefors"** DRY
 WHITE SPRUCE—GROUND WOOD

Tonnage available on dock for prompt shipment

THE BORREGAARD CO., INC.
 200 FIFTH AVENUE NEW YORK CITY

LOGS FOR SALE

The Royal Trust Company, Montreal, Authorized Trustee for the properties of Great Eastern Paper Company, Limited, Authorized Assignor, offers subject to prior sale:

Spruce logs about 5,000,000 ft. B.M.
Balsam logs about 5,000,000 ft. B.M.
Cedar logs about 4,000,000 ft. B.M.

These logs are in, or on the banks of, the Madeleine River, Gaspé County, Quebec, and are offered for sale as they lie, but the purchaser would have the use (on terms to be arranged) of such of the Company's plant as is necessary for handling the wood. All facilities will be given for the inspection of the wood and of the opportunities for its removal. The Vendor expressly stipulates that intending purchasers must satisfy themselves, and that the sale is not being made on the Vendor's representations in any way. Address Tenders to The Royal Trust Company, Montreal

MONTREAL, July, 1922. CANADA

TAYLOR, BATES & CO.

*Members New York Stock Exchange
 Members New York Cotton Exchange*

100 Broadway, New York

Tel. Rector 1140



**BONDS
 STOCKS
 COTTON**

**Bought and Sold
 on
 Commission**

BRANCH OFFICE

41 EAST 42nd STREET

Tel. Murray Hill 5631

1864

1922

"EXCELSIOR" FELTS

for every grade of

PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

Seamless felts for fast running.
 satin Style felts for finish.
 special felts to meet every condition.
 send us your felt problems.

KNOX WOOLEN COMPANY
 CAMDEN, MAINE

SOLD BY

BULKLEY, DUNTON & COMPANY

75-77 Duane St., N. Y., and direct

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, AUGUST 1, 1922.

ALUM.—The market for ammonia alum is still limited and the bulk of summer business has been transacted at the quoted prices of 3.90 cents a pound for powdered alum, 3.65 for ground and 3.50 for lump.

BLEACHING POWDER.—This commodity is in excellent demand but only very limited quantities are available. Production of bleach has been curtailed to such an extent over the summer months that higher prices are generally expected. At 1.60 cents a pound, the market is quite firm.

BLANC FIXE.—Quoted at 3.50 to 3.75 cents per pound, dry blanc fixe is moving in small quantities and paper makers are taking up correspondingly light amounts of blanc fixe pulp at market prices ranging from \$37.50 to \$45 a ton.

CASEIN.—Prices of this commodity continue to soar, some dealers quoting as high as \$18 to \$20 per ton for small lots of Argentine Casein and the domestic product finding a ready market at \$16 to \$18. Next winter's contracts are signed at \$13 and \$14 a ton.

CAUSTIC SODA.—Caustic is doing well for the season of the year and prices range from 3.10 to 3.25 cents per pound. A basis of 60 per cent brings the spot price of caustic soda in the neighborhood of 2.50 cents a pound.

CHINA CLAY.—Without any apparent flagging in demand, China clay continues to be imported in goodly quantities to supply both the pottery and paper industries in this country. The larger importers from England are quoting from \$14 to \$22 per ton and report that plants abroad are operating at capacity. Domestic washed China clay is selling at \$7 to \$10 a ton and the unwashed at \$5.50 to \$8.

LIQUID CHLORINE. Chlorine demand has slackened materially in recent weeks although there is still a fair volume of business in 100-pound cylinder lots. Quotations on this quantity range from 4.50 to 7.00 cents a pound due to the spotty condition of the market, while tank car lots may be obtained as low as 4.25 cents a pound or better.

ROSIN.—Business is moving regularly in the rosin market and the price of \$6.20 per barrel of 280-pounds, ex-dock New York still holds. The commodity is quoted at \$5.20 at Savannah, Ga.

SALTCAKE.—Due to the fact that manufacturers find it unprofitable to produce acids merely to secure saltcake, the reserve supplies of this commodity have been completely used up. Chrome cake quotes at \$18 to \$19 with acid cake up as high as \$24 and \$25 in some cases, \$22 a ton being a fair average.

SATIN WHITE.—Along with the general improvement in the coated paper business, satin white is picking up in demand. The commodity is still quoted at 1.50 to 2.00 cents a pound and the market is growing more firm each week.

SODA ASH.—Regular contract withdrawals feature the movement in the soda ash market, the bulk price being \$1.10 per cwt. on a 48 per cent basis and the bag price being \$1.20. \$1.51 is quoted as the approximate contract basis works.

SULPHUR.—There has been no apparent change in the sulphur market. It is still quoted at \$18 to \$20 per ton and the market is firm.

STARCH.—Moving actively, starch does not vary greatly from the present quotations of 2.47 cents a pound in bags and 2.75 cents in barrels for pearl and 2.57-2.85 cents respectively for the paper makers' grade.

SULPHATE OF ALUMINA.—Aluminum sulphate is scarce and due to the fact that there are not many sales registered, prices have advanced slightly to their present level of 2.25 to 2.50 cents a pound for iron free and 1.45 to 1.55 for plain.

TALC.—Talc appears to be moving well and the undertone of the market is firm at prices quoted which range from \$15 to \$17 per ton.

Market Quotations

(Continued from page 67)

Solid Ledger Stock..	2.25	2.50	New Black Soft..	.03	.03 1/2
Writing Paper.....	1.80	2.00	New Light See..	.02	.02 1/2
No. 1 Books, heavy..	1.60	1.75	Khaki Cuttings...	.02 1/2	.03 1/2
No. 2 Books, light..	1.40	1.50	Corduroy.....	.02	.02 1/2
No. 1 New Manila..	2.75	3.00	New Canvas.....	.07	.07 1/2
No. 1 Old Manila..	1.50	1.75	New Black Mixed..	2.75	3.00
Container Manila..	1.00	1.10	Old		
Old Kraft.....	2.00	2.25	White, No. 1—		
Overissue News....	.75	.80	Repacked.....	.06	.06 1/2
Old Newspaper....	.50	.60	Miscellaneous...	.04 1/2	.04 1/2
No. 1 Mixed Paper..	.45	.50	White, No. 2—		
Common Paper....	.40	.50	Repacked.....	.03	.03 1/2
Straw Board, Chip..	.40	.45	Miscellaneous...	.02 1/2	.02 1/2
Banders' Bd. Chip..	.40	.45	Thirds and Blues—		
Domestic Rags—New.			Repacked.....	1.65	1.80
Price to Mill, f. o. b. Phila.			Miscellaneous...	1.40	1.55
Shirt Cuttings—			Black Stockings...	1.75	2.25
New White, No. 1..	.10	.10 1/2	Roofing Stock—		
New White, No. 2..	.05 1/2	.06 1/2	No. 1.....	1.00	1.10
Silesias, No. 1....	.05 1/2	.06	No. 2.....	.90	1.00
New unbleached...	.09	.09 1/2	No. 3.....	.80	.90
Washables.....	.03 1/2	.03 3/4	No. 4.....	.80	.90
Fancy.....	.04 1/2	.04 3/4	No. 5A.....	nominal	
Cottons—according to grades—			B.....	nominal	
Blue Overall.....	.04 1/2	.05 1/2	C.....	nominal	
New Blue.....	.02	.02 1/2			

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper			Wood, Vat Lined..	47.25	50
Bonds.....	.06 1/2	.60	Filled News Board..	37.50	40
Ledgers.....	.07 1/2	.35	Solid News Board..	42.00	45.00
Writings.....	.07 1/2	.22 1/2	S. Manila Chip.....	52.50	55
Superfine.....	.15	.22 1/2	Pat. Coated.....	70.00	75.00
Fine.....	.15	.18			
Books, S. & S. C....	.07	.10	Old Papers		
Books, M. F.....	.05 1/2	.07 1/2	Shavings—		
Books, coated.....	.08	.10	No. 1 Hard White..	3.70	3.90
Label.....	.08 1/2	.09 1/2	No. 1 Soft White..	3.30	3.45
News sheets.....	3.75	—	No. 1 Mixed.....	1.50	1.75
News, rolls.....	3.50	—	Ledgers & Writings	.03 1/2	—
Manillas—			Solid Books.....	1.85	2.10
No. 1 Manila.....	\$6.75	—	Blanks.....	1.30	1.45
No. 1 Fibre.....	0.7 1/2	—	No. 2 Books Light..	.60	.70
No. 1 Jute.....	8.50	8.75	Folded News, over-		
Kraft Wrapping....	.06 1/2	.07	issues.....	\$11.25	\$12.50
Common Bogus.....	3.00	—	Gunny Bagging....	.70	.75
			Manila Rope.....	4.25	4.50
Boards			Common Paper....	.50	.60
(Per Ton Destination)			Old News.....	.55	—
Chip.....	\$35.00	\$37.50	Old Kraft.....	1.75	1.80
News, Vat Lined...	36.50	38.50			

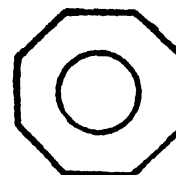
TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper			Sulphite, bleached..	90.00	95.00
(Mill Prices to Jobbers f. o. b. Mill)			Sulphate.....	70.00	—
Bond—					
Sulphite.....	.11	.12 1/2	Old Waste Papers		
Light tinted.....	.12	.13 1/2	(In carload lots, f. o. b. Toronto)		
Dark tinted.....	.13 1/2	.15	Shavings—		
Ledgers (sulphite)..	—	.13	White Env. Cut... 3.75	—	—
Writing.....	.10 1/2	.13 1/2	Soft White Book..	—	—
News, f. o. b. Mills—			Shavings.....	3.40	3.45
Rolls (carload)..	3.50	—	White Blk News..	1.70	—
Sheets (carload)..	—	4.25	Book and Ledger—		
Sheets (2 tons or over)	—	4.50	Flat Magazine and		
Book—			Book Stock (old)	1.70	—
No. 1 M. F. (carload)	9.50	—	Light and Crum-		
No. 2 M. F. (carload)	8.50	—	pled Book Stock..	1.55	—
No. 3 M. F. (carload)	8.00	—	Ledgers and Writ-		
No. 1 S. C. (carload)	10.00	—	ings.....	1.95	—
No. 2 S. C. (carload)	9.00	—	Solid Ledgers....	1.95	—
No. 1 Coated and litho.	14.00	—	Manillas—		
No. 2 Coated and litho.	13.00	—	New Manila Cut..	1.70	—
No. 3 Coated and litho.	12.25	—	Printed Manillas..	.90	—
Coated and litho., colored	14.25	—	Kraft.....	2.25	—
Wrapping—			News and Scrap—		
Grey.....	4.50	—	Strictly Overissue	.90	—
White Wap.....	5.00	—	Folded News....	.80	—
"B" Manila.....	5.50	—	No. 1 Mixed Pa-		
No. 1 Manila.....	6.75	—	pers.....	.60	—
Fibre.....	6.75	—	Domestic Rags—		
Kraft, M. F.....	8.00	—	Price to mills, f. o. b. Toronto.		
M. G.....	8.15	—	Per lb.		
			No. 1 White shirt		
Pulp			cuttings.....	.10 1/2	.11
(F. o. b. Mill)			No. 2 White shirt		
Ground wood.....	\$27.50	\$35.00	cuttings.....	.05 1/2	.05 1/2
Sulphite easy bleach-	—	65.00	Fancy shirt cut-		
ing.....	60.00	65.00	tings.....	.05	.05 1/2
Sulphite news grade,	50.00	60.00	No. 1 Old whites	.04	—
			Thirds and blues	.02	.02 1/2
			Per cwt.		
			Black stockings..	2.00	2.25
			Roofing stock:		
			No. 1.....	1.35	—
			No. 2.....	1.20	—
			Roofing stock:		
			Manila rope.....	.05 1/2	.05 1/2
			No. 2.....	.01 1/2	—
			Gunny bagging....	1.00	1.25

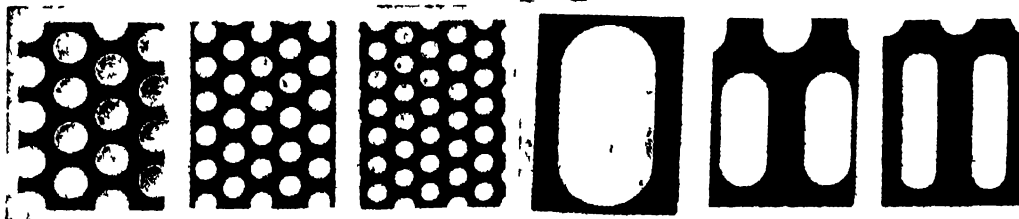
The Home of QualityFACTORY
132ND TO 133RD ST & BROOK AVE**PAPER BAGS****Sacks and Specialties**

ESTABLISHED 1901

SCHORSCH & CO.*Manufacturers***500 East 133d Street**This Registered Trade
Mark Octagonon a Paper
Bag Vouches for
Its Good Quality**: New York****Buchanan & Bolt Wire Company.**ESTABLISHED 1878 AT HOLYOKE, MASS.**Makers of Highest Grade Fourdrinier Wires, Dandy Rolls, Cylinder Covers, Brass Wire Cloth
of all Meshes for Paper, Pulp and Coating Mills—Quality Guaranteed****We make a specialty of Fine Wires for Magazine and Book Papers****Felt Test—Lowest Cost per Ton**

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio**PERFORATED METALS***All sizes
and
shapes
of Holes**All kinds
and
thicknesses
of Metal*

FOR CENTRIFUGAL AND ROTARY SCREENS, DRAINER BOTTOMS, FILTER PLATES, PULP WASHERS, ETC.

The Harrington & King Perforating Company**618 No. Union Ave., Chicago, Ill., U. S. A.****New York Office, 114 Liberty St**

WANT AND FOR SALE ADVERTISEMENTS

CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, \$1.00.

SITUATION WANTED, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED—Foreman on Satchel Bottom Paper Back Machines, Rotary Tuber and Bottomers. Good chance. Steady job, New York City factory. Reply giving experience, age, salary expected, etc., to Box 5243, care Paper Trade Journal. A-10

WANTED—Man capable of supervising Fibre Container factory equipped with most modern machinery. Experienced man preferred. Address, Box 5246, care Paper Trade Journal. A-10

WANTED—Experienced man with investment to connect himself permanently with paper stock company on Pacific Coast and take over management of Los Angeles plant. Write fully stating experience, salary expected, contemplated investment, etc. All correspondence confidential. Address, Box 5261, care Paper Trade Journal. A-10

WANTED—Married man for plant Superintendent. One who is familiar with manufacturing pulp products, with certain knowledge of paper mill machinery and equipment, capable of handling men and women with mechanical ability, and production producer. State experience and salary. Address, Box 5263, care Paper Trade Journal. A-3

WANTED AT ONCE

for box board mill, two first class beatermen, two first class backtenders, give age, references, experience and where last employed in first letter. National Paper Products Co., Stockton, California. A-3

WANTED

MASTER Mechanic for two machine writing mill in good size middle west city. In application state age, experience and references. Address, Box 5282, care Paper Trade Journal. A-10

HELP WANTED

WANTED—Two good Backtenders by mill in the Middle West running on plain chip and specialties. Address, Box 5264, care Paper Trade Journal. A-3

WANTED—Experienced Potdevin Automatic Bag Machine Adjusters; also old style square and flat, and experienced balers. All applicants must state previous experience and salary expected. Send all communications to Consolidated Paper Bag Company, 125 Merrimac Street, Boston, Mass. A-17

WANTED—Master Mechanic, capable of taking entire charge of repair crews in a large up-to-date box board mill in middle west. None but a hustler and live wire considered. References required. Address, Box 5265, care Paper Trade Journal. A-3

BEATER ENGINEER, one familiar with Chipboard, test liner and folding box board. Must be good on beater colors and be able to handle pulp in an efficient manner. Address, Box 5266, care Paper Trade Journal. A-3

WANTED—Night superintendent for waxed paper plant in the middle west. Must be experienced in broad wrapper work. Good permanent position. Address, Box 5284, care Paper Trade Journal. A-17

WANTED: Night boss for three machine Book Mill. Only persons having experience in that position need apply. State age, give references. Address, Box 5296, care Paper Trade Journal. A-3

WANTED: First Class Millwright capable of performing any paper mill repair work. Reply giving experience and references. Address, Box 5297, care Paper Trade Journal. A-10

WANTED, WOOD PULP SALESMAN. Importer has opening for experienced man. Partnership offered man with established trade, if desired. Splendid opportunity for right man. Address, Box 5298, care Paper Trade Journal. A-3

WANTED: Three first class machine tenders, one back tender and one beater engineer for Book and Writing Mill. Send references in first letter. Address, Box 5299, care Paper Trade Journal. A-17

WANTED: Experienced machine tender, backtender, beaterman, for glassine and grease proof mill, also calender men and helpers. Cameron rewinderman. Address, Box 5310, care Paper Trade Journal. A-3

WANTED:

Master Tissue Paper Crepers who fully understand the art of creping lightweight tissues for napkins. A splendid and exceptional opportunity is offered to the right men. When replying please furnish full details of your past experiences, etc. Independent Paper Mills, Inc., 68 Thirty-fifth Street, Brooklyn, New York. A-3

SITUATIONS WANTED

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5314, care Paper Trade Journal. A-3

A MAN thoroughly competent to run Calender and Press Roll Grinding Machine and able to determine Crowns desired. Wishes permanent or temporary work. Address, Box 5317, care Paper Trade Journal. A-3

SITUATIONS WANTED

PAPER LINE—Man available. Fifteen years' experience with large paper converter, desires position in sales and paper mill or jobbing line; would consider part interest in established jobbing house. Best references. Address, Box 5262, care Paper Trade Journal. A-3

EXPERIENCED SALESMAN—Fine papers, desires position to sell Chicago and Central West jobbers. Address, Box 5263, care Paper Trade Journal. A-3

MILL CONNECTION WANTED for the Greater New York territory and vicinity, by selling organization in touch with the large buyers and users of paper. M. F. Super, Coated, Litho Coated, Bond Kraft or News Print, preferred. Have ample capital to finance large volume of business. Eastern Mill preferred. Address, Box 5265, care Paper Trade Journal. A-10

\$6,000 OFFICE MANAGER, Sales, Credits, Purchases, Costs, etc., seeks new connection. Highest references given. Address, Box 5269, care Paper Trade Journal. A-3

SALES MANAGER—Man 40, college education, thoroughly experienced as salesman, wishes to make connection with firm desiring a sales or district manager. Have wide experience in selling beater room equipment and knives. Large following among paper mills in Eastern Penna. Address, Box 5270, care Paper Trade Journal. A-10

SULPHATE PULP SUPERINTENDENT, or Assistant, with proven ability, desires connection with mill having production trouble. Nine years' experience in the U. S. and Canadian mills. Best of references. Address, Box 5276, care Paper Trade Journal. A-17

SITUATION WANTED—Sheet calender man would like steady work running sheet calenders. Ten years' experience running light and heavy weight linen ledgers and bond papers. Address, Box 5290, care Paper Trade Journal. A-10

SITUATION WANTED—A one hundred per cent American, between 35 and 40 years old, married, and at present employed. Have had nineteen years' experience in the Paper Industry, holding only executive positions. Thoroughly acquainted with the details of manufacturing, operating and financing a plant. Securing a salary is not the vital point, but locating with a concern where there is a future is the objective. Address, Box 5291, care Paper Trade Journal. A-3

YOUNG MAN, age 30, seven years experience paper line, four selling. Well acquainted with New York Trade, also mills. Open for engagement with reliable fine paper jobber or mill agent. Either in selling or executive capacity. Address, Box 5286, care Paper Trade Journal. A-10

MECHANICAL ENGINEER and master mechanic is open for employment. Has long experience in pulp and paper mills and has advised changes which have greatly improved the output with small costs. If your machines or any part of mill is not up to its production, let me give you my experience at small cost. Address, Box 5287, care Paper Trade Journal. A-3

MILL MANAGER thoroughly experienced in the manufacture of ground wood, sulphite, wrapping paper, news and board. Cost accounting, purchasing and sales experience. Now employed, desires new connection. Good references. Address, Box 5289, care Paper Trade Journal. A-3

UNIVERSITY GRADUATE in chemistry with broad training and experience, several years in pulp and paper work, particularly along chemical lines, desires position in the paper industry. Chemical control, operating or sales. At present employed. Address, Box 5300, care Paper Trade Journal. A-17

DO YOU WANT a practical News Superintendent or Assistant of 25 years' experience? News business good now. I can produce. Best references from last employer. Address, Box 5301, care Paper Trade Journal. A-10

SITUATIONS WANTED

EXPERIENCED PAPER MAN. Have recently disposed of my business. Seek entry into the field again as jobber, broker or executive; Coarse or Fine. Fifteen years as jobber. Mill experience in wrappings. Experience covers financing, sales, buying, etc. Would invest in a new house or buy interest in an old one or accept salary. To any mill making standard line or specialties, not represented in Chicago, would like to hear from you. Would put in a stock or operate as a broker. If you don't care to make yourself known, write through your attorney. To any salesman who can produce, desiring to go into business, will organize and finance. Address, Box 5302, care Paper Trade Journal. A-3

SULPHITE SUPERINTENDENT with paper mill experience, technically educated, looks for position as Assistant Manager in sulphite mill, 36 years of age. Experience in United States, Canada and abroad. Address, Box 5303, care Paper Trade Journal. A-17

ENVELOPE FOREMAN and machine adjuster experienced on Rotary and Plunger Machines. At present employed, would like to make a change. Address, Box 5304, care Paper Trade Journal. A-3

YOUNG MAN college educated, thoroughly experienced in Sulphate Mill operation, desires position as foreman or assistant to superintendent. Familiar with mill control methods. References. Address, Box 5305, care Paper Trade Journal. A-10

SUPERINTENDENT or assistant superintendent. Swede, 30 years of age, graduated from Technical University, Chemical Department in Sweden, with practical experience (1) Two years as laborer in different departments at different mills during the college time. (2) Four years as tour foreman at one of the most modern and largest paper mills for high grade paper in Sweden (high grade paper of rag and sulphite, blotting paper, tissue of rag and sulphite, crepe paper, wax paper and boxboard.) (3) Superintendent at paper mill one half year, during manager's absence (book paper, magazine, envelope, manila and M. G.) (4) Superintendent at paper mill nine months until mill shut down due to the general depression of business (high grade sulphite paper.) Came to America last year in August and got position as assistant superintendent at paper mill (bond, writing, ledger and book papers) Wish now to go to another mill and preferably to a mill with good opportunities. Address, Box 5309, care Paper Trade Journal. A-17

MAN EXPERIENCED IN PAPER MILL ACCOUNTING, costs, office management and administrative problems, seeks position with progressive firm. Address, E. J. B., P. O. Box 760, Cincinnati, Ohio. A-3

PRACTICAL PAPER MAKER desires a position with a board or specialty mill. Having had experience in both cylinder and fourdrinier mills in all departments. Have been doing engineering work in different mills for past four years. Experienced in construction and mechanical details. Address, Box 5233, care Paper Trade Journal. A-17

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FOR SALE: One vertical baling machine makes bales 54" x 30" x 45" high, weighing about 1,200 lbs. each, complete with gears ready for motor attachments. Made by Minnich Machine Company, Landisville, Lancaster County, Pa. Bargain. Stecher Lithographic Co., Rochester, N. Y. A-10

FOR SALE: Black & Clawson cylinder machine trimming 96". Wet and consists of 6 cylinders, 6 primary and 3 secondary presses. The drying end of the machine has 94 dryers 36" in diameter, 2 calendar stacks with respectively 5 and 7 rolls in each. The winder is attached direct to the machine. Machine in good running order. We invite correspondence. Bogalusa Paper Company, Inc., Bogalusa, Louisiana. A-17

FOR SALE: Double patent coated white cardboard Offcuts running from 5" to 9" in width of different lengths. Cheap. High grade quality. Address, Mill Dept. Rose Lithographic Corporation, 55 33rd Street Brooklyn, New York. A-17

FOR SALE: One No. 10 Reeves Variable Speed Transmission. Brownville Board Co., Brownville, N. Y. A-10

FOR SALE: 1 small Jordan Engine. 6 Farm Drives. Complete Triple-Deck frames for 44 dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. A-17

MISCELLANEOUS

WANTED: Two Jordan engines, Jones Imperial make or Noble and Wood Mammoth Junior. Must be in good condition. State price and where same can be seen. Address, Box 5307, care Paper Trade Journal. A-3

WANTED: Second hand Hamblett Cutter, 62" to 72" wide in first class condition and with back stands. Write price and description. Fulton Bag and Cotton Mills, Atlanta, Ga. A-3

WANTED: \$25,000 Wholesale Paper House in Southern California incorporated 18 months ago with \$50,000 paid in, now needs additional capital. Doing over \$30,000 per month. Carry mostly wrappings and kindred lines, but also some Bond and Envelopes. All communications strictly confidential. Address, Box 5308, care Paper Trade Journal. A-3

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WANTED: Six dryers, 26" diameter, 86 to 92" face. Also seven roll stack of calendars, 90" face. California-Oregon Paper Mills, Los Angeles. A-3

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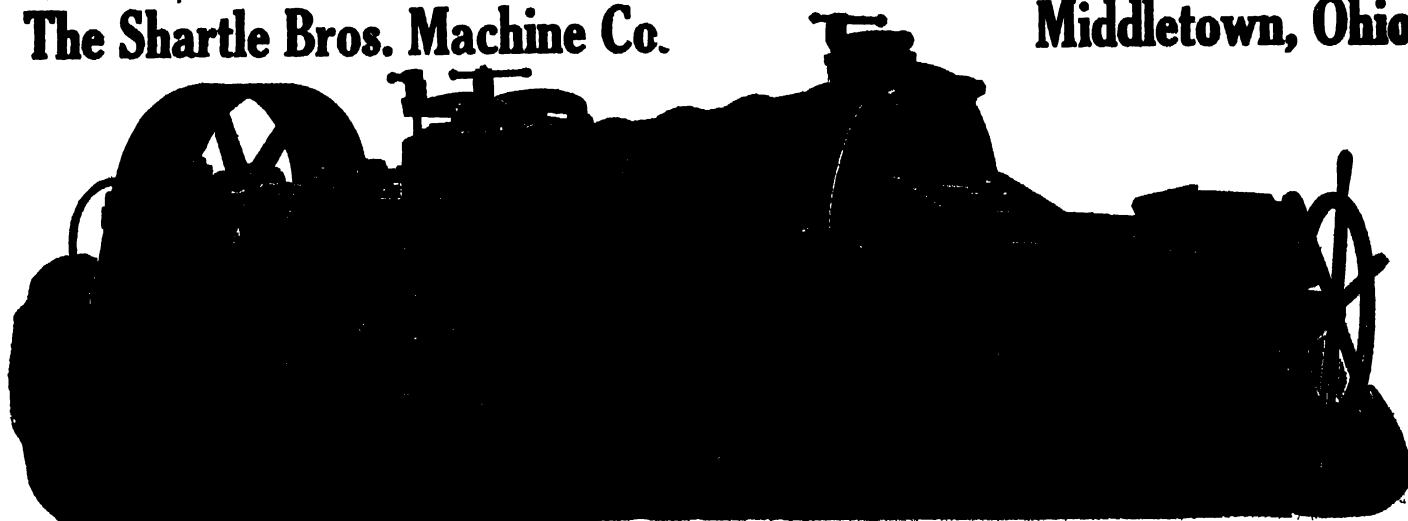
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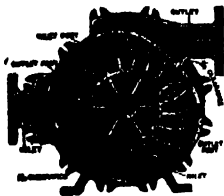
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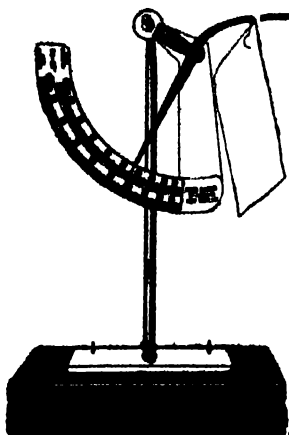
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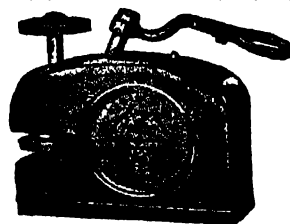
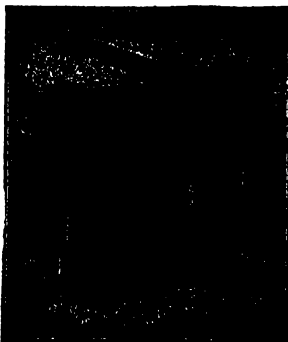
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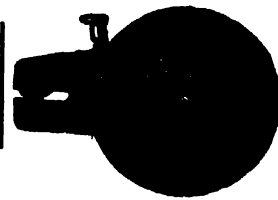
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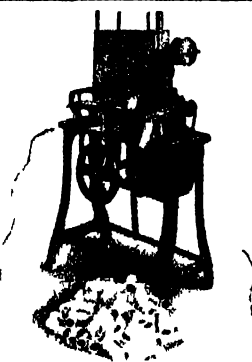
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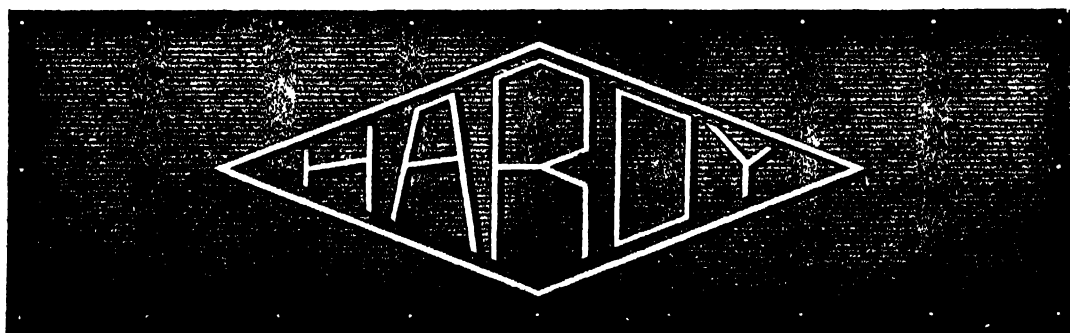


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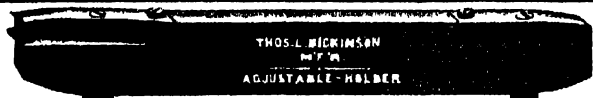
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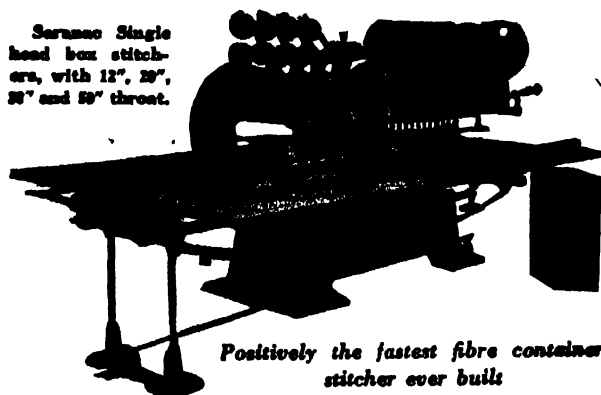
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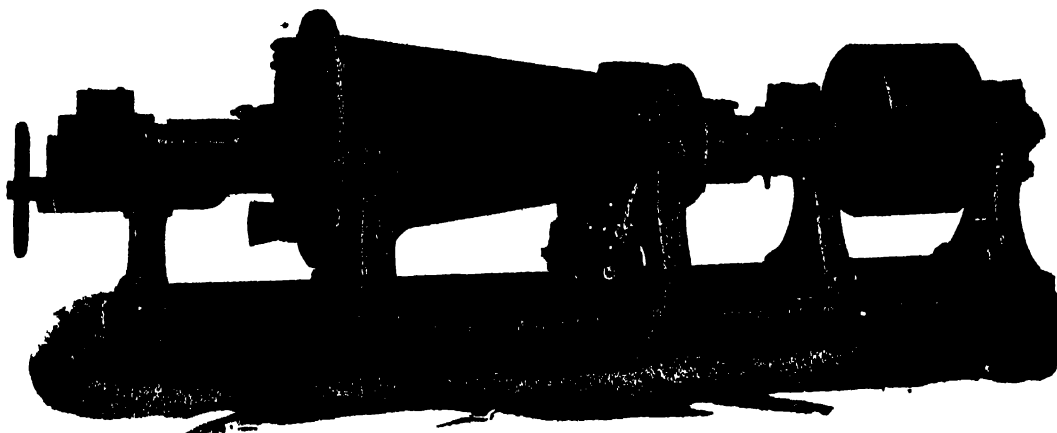
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CLASSIFIED INDEX TO ADVERTISEMENTS

	Page		Page		Page
ACID SYSTEMS.		White Tar Aniline Corporation The	88	Waterbury Felt Co	
G. D. Jensen Co.	77	C. K. Williams & Co.	88	Waterbury & Sons Co. H	
ADDING MACHINE ROLLS.		CHEMISTS		FELT ROLLS.	
Paper Manufacturers Co.	82	United States Testing Co.	77	Rodney Hunt Machine Co.	
AGALITE.		CLAY.		FILTERING SYSTEMS.	
Union Felt Co.	82	Atterbury Bros.	Front Cover	Norwood Engineering Co.	
U. S. Talc Co.	82	John W. Higman Co.	0	FLOOR COVERINGS.	
ALUM.		Miner Edgar Co. The	75	J. Sonneborn & Sons	
The Kuhlfeisch Corp.	88	Paper Makers Chemical Co.	88	FLOOR HARDENER (Concrete).	
Pennsylvania Salt Mfg. Co.	78	Star Clay Co.	5	J. Sonneborn & Sons	
Superior Chemical Co.	80	Western Paper Makers Chemical Co.	5	FOLDING MACHINES	
Winkler Bros. Inc.	76	CLUTCHES (Friction, Etc.).		Hudson Sharp Machine Co.	
ARCHITECTS AND ENGINEERS		Hill Clutch Co.	5	FOURDRINIER WIRES.	
George I. Drew	76	COGS.		Appleton Wire Works	
Hardy I. Ferguson	76	N. I. Bowsher Co.	88	Buchanan & Belt Wire Co.	
William I. Field	76	Menasha Wood Split Pulley Co.	75	Cable Excelsior Wire Mfg. Co.	
George I. Harby	76	COMPRESSORS (Air).		Cheney Bicycle Wire Works	
G. D. Jensen Company	77	The Nash Engineering Co.	7	Eastw. Wire Mfg. Co.	
Management Engineering and Development Co.	77	CONVEYORS (Pulpwood).		Green Bay Wire Works	
E. I. Smith	76	Jeffrey Mfg. Co.	8	Lindsay Wire Weaving Co.	
Stebbins Engineering Co.	77	Weller Mfg. Co.	6	Joseph O'Neill Wire Works	
Thomas J. Timmins & Son	76	CORDAGE		The W. S. Tyler Company	
Vitale & Rothery	76	Columbian Rope Co.	7	FURNACE (Automatic).	
Joseph H. Wallace & Co.	76	CORES		Murphy Iron Works	
ASBESTINE PULP.		Thamson Paper Co. Co.	7	GAUGES (Calliper)	
International Pulp Co.	Front Cover	CREPEING MACHINES		Lord & Smith Machine Co.	
ASH-HANDLING MACHINERY		Hals & Sharp Machine Co.	61	GAUGES (Pressure, Indicating and Recording).	
Jeffrey Mfg. Co.	8	CUTTERS.		Bristol Co. The	
BALL MILLS.		Smith & Worcester Mfg. Co.	6	GUMMING AND GLUING MACHINERY.	
The Crowley Machine Co.	7	DIE CUTTERS.		Electric Machine Co.	
BARKERS.		Hogson & Pettis Mfg. Co.	61	INVESTMENTS	
Valley Iron Works	7	Independent Die Co. Inc.	6	Fowler Bates & Co.	
BEARINGS (Collar Oiling).		DIGESTERS		IRON EXTRACTORS	
Hill Clutch Co.	3	American Welding Co.	9	Oiles Co. R. Inc.	
BEATER PADDLES		Biggs Boiler Works Co.	33	KNIVES, ETC.	
Menasha Wood Split Pulley Co.	78	DRINKING CUPS.		Boston & Son J. W.	
BEATING ENGINES.		E. N. Britt Company Ltd.	41	Melvery Co. & Sons	
Appleton Machine Co. The	60	DRIVES		LUBRICANTS	
Beloit Iron Works	80	Westinghouse Electric & Mfg. Co.	7	Vacuum Oil Co.	
Claffin Engineering Co.	80	DRIVES (Gear)		MICROMETERS	
Dayton Heater & Heat Co.	86	Latrol Tourley & Machine Co.	61	Ashcroft Mfg. Co.	
Dillon Machine Company Inc.	1	DRIVES (Silent Chain).		E. I. Co. Co.	
Dilts Machine Work Inc.	86	Morse Chain Co.	77	Foreign Paper Mills Co.	
Douaington Mfg. Co.	81	DYERS		MICROMETER CALIPERS	
Emerson Mfg. Co.	83	Biggs Boiler Works Co.	4	Jedell Car Wheel Co.	
Noble & Woods Machine Co.	7	DRYER EXHAUSTS		MILL COGS.	
Valley Iron Works	35	The Nash Engineering Co.	76	N. P. Bowsher & Co.	
BELTING.		DRYING SYSTEMS		MOTORS.	
Goodyear Tire & Rubber Co.	76	Open Cell Heater & Purifier Co.	13	B. I. Perkins & Sons Inc.	
Republic Rubber Co.	76	W. B. Finkle	—	MOTOR TRUCKS	
BOILERS.		Ross Engineering Co. J. O.	—	Pickard Motor Co. Co.	
Heine Boiler Co.	21	P. J. Sturtevant Co.	—	OILS AND GREASE	
BRONZE CASTINGS		DYES, ANILINE		Vacuum Oil Co.	
Hyde Windlass Co.	—	Heller & Metz	—	PACKING.	
BUCKETS (Elevator).		National Aniline & Chemical Co.	61	Jenkins Bros.	
Hendrick Mfg. Co.	3	White Tar Aniline Corporation The	61	PAPER BAG MACHINERY.	
BUNDLING MACHINES		Du Pont de Nemours & Co. I. I.	6	Electric Machine Co.	
Hudson Sharp Machine Co.	59	DYE STUFFS		Smith & Worcester Mfg. Co.	
CALENDER ROLLS		Electric Hoists	81	PAPER BAG MANUFACTURERS	
Appleton Machine Co. The	60	Shepherd Electric Crane & Hoist Co.	76	Laurice Bag Co.	
Farrell Laundry & Machine Co.	41	ENVELOPE MACHINES	27	Sasch & Co.	
Lobdell Car Wheel Co.	46	Electric Mfg. Co.	2	PAPER BOX BOARDS	
Norwood Engineering Co.	5	F. I. Smith Machine Co.	13	C. I. La Boiteaux Co.	
B. F. Perkins & Sons Inc.	11	FAN AND BLOWING SYSTEMS.	69	PAPER CORES	
Textile Finishing Machinery Co.	84	B. F. Sturtevant Co.	71	Flaxman Paper Core Co.	
CARBON TOOLS		FAN PUMPS	88	PAPER CUTTERS.	
Thomas L. Dickinson	82	Valley Iron Works	80	Humlet Machine Co.	
CASEIN.		FELTS AND JACKETS	2	PAPER DEALERS	
Casein Mfg. Co.	—	Allany Felt Co.	13	Lernstrom Paper Co.	
CENTRIFUGAL PUMPS.		Appleton Wire Mills	69	R. F. Hammond	
Valley Iron Works	27	Bulkley Duntun & Co.	71	PAPER EXPORTERS.	
CHAINS.		Driver Bros. Co.	88	Hudson Trading Co.	
Jeffrey Mfg. Co.	8	Fitchburg Duck Mills	88	Katzenstein & Keene Inc.	
CHEMICALS, COLORS, ETC.		F. C. Huyck & Son	88	Parsons Trading Co.	
Arnold Hoffman & Co. Inc.	82	Knex Woolen Company	88		
Du Pont de Nemours Co. E. F.	13	Orr Felt & Blanket Co.	88		
Heller & Metz Co.	13	Shuler Benninghofen Co.	88		
Kuttruff Niekhardt & Co.	87				

Front Cover

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CLASSIFIED INDEX TO ADVERTISEMENTS

PAPER MANUFACTURERS.		Page	PRESS ROLLS.		Page	STOCK REGULATORS.		Page
Dayless Mfg. Co.	75		Rodney Hunt Machine Co.	—		Trimby Machine Works	46	
Becker Paper Corporation	37		PLUGS.			STRAW MAKING.		
Brown Company	9		Menasha Wood Split Pulley Co.	78		Samuel M. Langston Co.	82	
Collins Mfg. Co.	7		PLUGS (Wood).			SUCTION BOX COVERS.		
Diamond State Fiber Co.	Front Cover		O. L. Bartlett	11		Menasha Wood Split Pulley Co.	78	
Eastern Mfg. Co.	74		PULP STONES.			SULPHITE, BLEACHED AND UNBLEACHED.		
Eaton Dikeman Co.	—		International Pulp Stone Co.	Front Cover		J. Andersen & Co.	4 and 25	
Fort Howard Paper Co.	11		Lombard & Co.	87		The Borgegaard Co., Inc.	69	
Franklin Paper Co.	82		PUMPS.			Brown Co.	5	
Hammermill Paper Co.	—		Frederick Iron & Steel Co.	—		Bulkley, Dunton & Co.	14	
Hanna Paper Corporation	5		Hayton Pump & Blower Co.	—		Butterworth & Co., Inc.	76	
Howard Paper Co.	65		Hudson-Sharp Machine Co.	59		Canadian Robert Dollar Co.	39	
Mississquoi Pulp & Paper Co.	74		PUMPS (Vacuum).			Columbian Paper Co., Inc.	78	
Mountain Mill Paper Co.	65		The Nash Engineering Co.	77		Craig Becker Co., Inc.	3	
St. Regis Paper Co.	5		PRESSURE BULKERS.			Eastern Manufacturing Co.	74	
Sherman Paper Co.	77		B. I. Perkins & Sons, Inc.	11		Mead Sales Co., The	62	
Stratford Paper Co.	77		RAG CUTTERS.			Price & Pierce, Ltd.	Front Cover	
Wausau Sulphate Fiber Co.	—		B. F. Perkins & Sons, Inc.	11		Pulp & Paper Trading Co.	74	
West Virginia Pulp & Paper Co.	65		Taylor, Stiles & Co.	—		SULPHUR.		
PAPER AND PULP MACHINERY.		Page	RECORDING INSTRUMENTS.			Texas Gull Sulphur Co.	7	
Appleton Machine Co.	60		Bristol Co.	59		Union Sulphur Co.	80	
Bagley & Sewell Co.	—		RECORDING TACHOMETERS.			TANKS (Water, Oil, etc.).		
Baker Mfg. Co.	83		Bristol Co.	59		Biggs Boiler Works Co.	61	
Beloit Iron Works	23		ROLL GRINDERS.			W. F. Caldwell Co.	—	
Bird Machine Works	21		Lohdell Cat Wheel Co.	40		New England Tank & Tower Co.	87	
Black-Clawson Co.	11		ROSIN.			Stearns Lumber Co., A. F.	—	
Clark-Aiken Co.	12		Hercules Powder Co.	—		Tokheim Oil Tank & Pump Co.	—	
Frank H. Davis	73		ROSIN SIZE.			Woodford Tank & Tank Co.	80	
Downingtown Mfg. Co.	86		Arabul Mfg. Co.	87		TEMPERATURE RECORDING.		
Glens Falls Machine Works	10		Paper Makers Chemical Co.	75		Bristol Co.	59	
Hudson Sharp Machine Co.	59		Western Paper Makers Chemical Co.	75		TIMBER ESTIMATES.		
Improved Paper Machinery	39		ROTARY BLEACHING BOILERS.			The Bradley Sales Agency	76	
Sandy Hill Iron & Brass Co.	—		Biggs Boiler Works Co.	61		James W. Sewall	76	
Shurtle Bros. Machine Co.	73 and 74		SAVEALLS.			TIME RECORDS.		
Smith & Winchester Mfg. Co.	61		Bud Machine Co.	21		Bristol Co.	59	
Trimby Machine Works	46		SATIN WHITE.			TRANSMISSION MACHINERY.		
Valley Iron Works	27		The Kahlbensch Corp.	—		H. W. Caldwell Co.	3	
Waterville Iron Works	2		Paper Makers Chemical Co.	75		Hill Clutch Co.	3	
PAPER MILL AGENTS.		Page	Western Paper Makers Chemical Co.	75		Reeves Pulley Co.	63	
Dillon & Barnes	82		SCALES (Paper).			Weller Mfg. Co.	62	
Melver, Dana T.	2		Fried Baker	78		TURPENTINE.		
PAPER AND PULP MILL BROKERS.		Page	E. J. Cady & Co.	—		Hercules Powder Co.	—	
Gibbs-Brower Co.	—		Foreign Paper Mills, Inc.	3		TWINES.		
PAPER SPECIALIST.		Page	SCREENS.			American Manufacturing Co.	60	
Charles W. Bell	77		Beloit Iron Works	23		VALVES.		
PAPER STOCK.		Page	Bud Machine Co.	21		Crane Co.	31	
Atterbury Bros.	Front Cover		Central Mfg. Co.	—		Jenkins Bros.	4	
Butterworth & Co., Inc.	76		Wm. A. Hardy & Sons Co.	91		VAPOR ABSORPTION SYSTEMS.		
Castle, Gouthrie & Overton	80		Union Screen Plate Co.	85		Ross Engineering Co., Inc.	76	
Gumbinsky Bros.	88		SHREDDERS (Pulp and Paper).			VENTILATING FANS.		
Hicks, Daniel M.	82		Valley Iron Works	27		B. F. Perkins & Sons, Inc.	11	
Mendelson Bros. Paper Stock Co.	77		SKYLIGHTS.			Ross Engineering Co., Inc.	76	
Penn Paper & Stock Co.	82		F. Van Noorden & Co.	87		VEGETABLE PARCHMENT PAPERS.		
Salomon Bros. & Co.	82		SLASHERS.			Kalamazoo Vegetable Parchment Co.	65	
Train Smith Co.	Front Cover		Rythia & Fung Co.	—		WAX PAPERS.		
PAPER TESTERS.		Page	SLITTERS AND REWINDERS.			Lindsay Bros., Inc.	78	
Ashcroft Mfg. Co.	78		Beloit Iron Works	23		WOOD FLOUR.		
E. J. Cady Co.	—		C. Benninghohn & Son	76		Union Wood Flour Co.	82	
Foreign Paper Mills, Inc.	3		Cameron Machine Works	83		WOOD PULP IMPORTERS.		
B. F. Perkins & Sons, Inc.	11		Dietz Machine Works	9		American Wood Pulp Corp.	75	
Thwing Instrument Co.	—		Gruessinger Machine Works	86		J. Andersen & Co.	4 and 25	
Valley Iron Works	27		Hudson-Sharp Machine Co.	59		Ira Beebe & Co.	87	
PAPER TUBE MACHINERY.		Page	Samuel M. Langston Co.	82		The Borgegaard Co., Inc.	69	
Dietz Machine Works	9		SPlicing TISSUES.			Bulkley Dunton & Co.	14	
Gruessinger Machine Works	80		F. M. Sergeant Co.	—		M. Gottesman & Co.	—	
PAPER WAXING MACHINERY.		Page	SPRUE LOGS.			Hammond, R. F.	Front Cover	
Farrel Foundry & Machine Co.	41		Royal Trust Co.	69		L. J. Keller Company	87	
Putdevia Machine Co.	6		STARCH.			Lagerloef Trading Co.	12	
PERFORATING MACHINES.		Page	Corn Products Refining Co.	12		Mead Sales Co., The	62	
Dietz Machine Works	9		STEAM SPECIALTIES.			Nilsen, Lyon & Co., Inc.	19	
PERFORATED METAL.		Page	Crane Co.	31		A. J. Patten & Co., Inc.	63	
Harrington & King Perforating Co.	71		Open Coil Heater & Purifier Co.	—		J. F. Patten & Co., Inc.	63	
Hendrick Mfg. Co.	9		STITCHING MACHINERY.			Perkins Goodwin Co.	37	
Charles Muntz & Sons	81		Satanic Machine Co.	83		Scandinavian American Trading Company	Front Cover	
Manhattan Perforated Metal Co.	82					WOOD ROLLS.		
PIPE (Genuine Wrought Iron).		Page				Rodney Hunt Machine Co.	—	
Reading Iron Co.	—							

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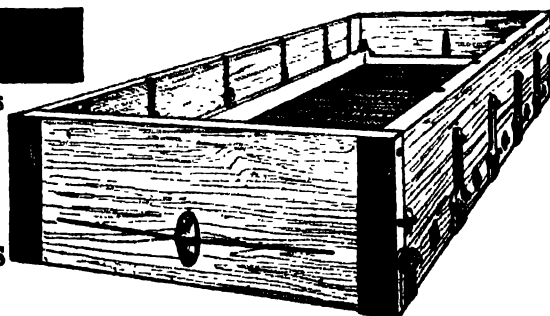
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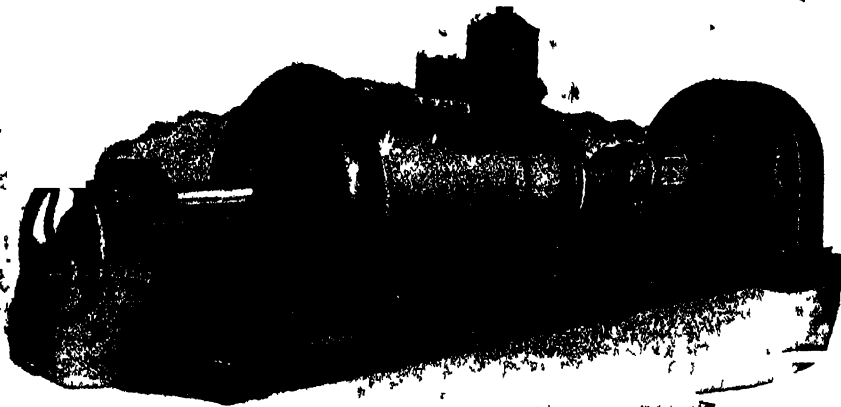
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**Are
the
Best**

Full Sheet Paper Scale

Standard Scale for telling actual weight per ream of 480 and 500 sheets in the size of the sheet that is weighed. Graduated $\frac{1}{4}$ to 125 lbs. Brass weight comes with the Scale to double its capacity.

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Good valves for
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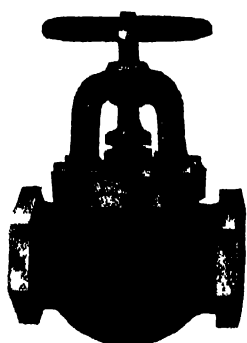


Fig 141, Jenkins Standard
 Iron Body Globe Valve,
 screwed

Fig 143, Angle

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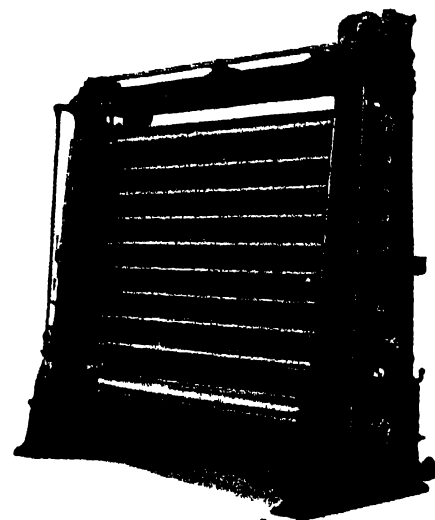
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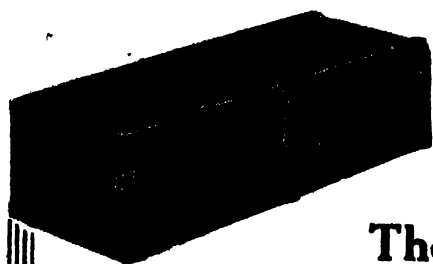
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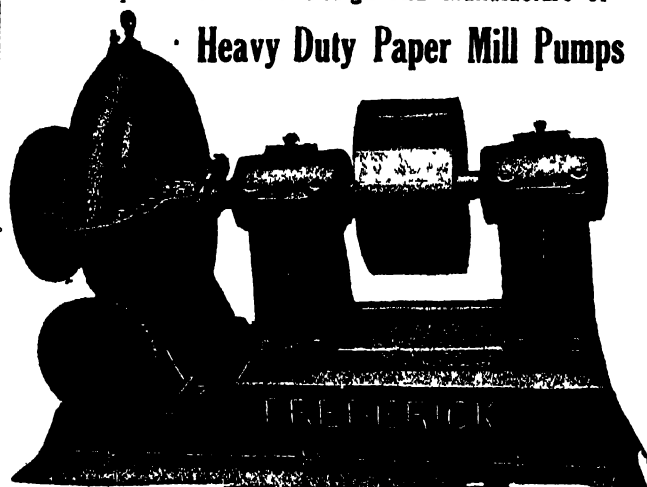
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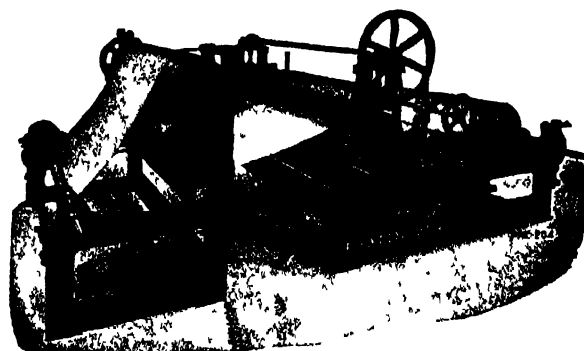
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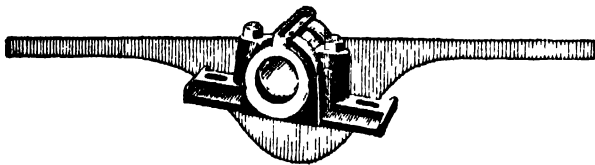
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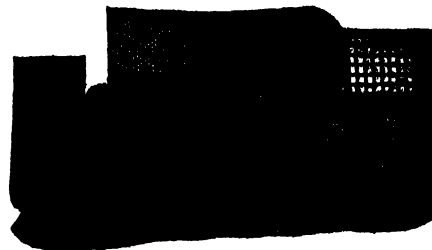
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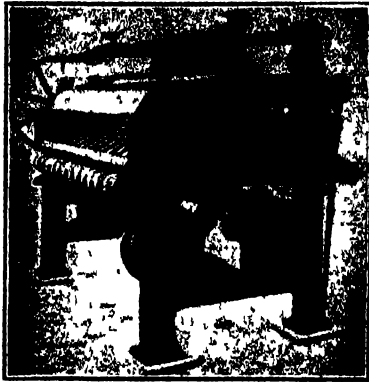
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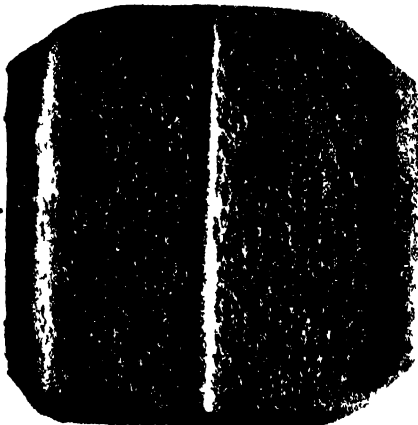


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Thursday, August 24, 1922

Table of Contents

News of the Trade:

	PAGE
Production of News Print for July.....	16
No Decided Decline in Paper Production.....	17
Denver to Have \$500,000 Paper Mill.....	17
Change Wood Pulp Clauses Not to Antagonize Canada	18
I. U. Sutphin Paper Co. Damaged by Fire.....	18
Uncertain Conditions in Philadelphia Market.....	20
On Auto Tour of the U. S.....	20
Coal Shortage Closes Philadelphia Mills.....	20
Summer Quietude Period in Toronto Paper Market...	22
Introduction of Long Price List.....	22
Rolling Stock for New Abitibi Line.....	22
Toronto Paper Firm's Unique Publicity.....	22
Some Middle-Western Mills Closed by Coal Shortage ..	24
Whitaker Paper Co. Changes.....	24
Albemarle Paper Mfg. Co. Expands.....	24
Pulp and Paper Securities Again Active in Montreal..	26
New Machine for Spruce Falls Co.....	26
Forestry Students to Visit Canada.....	26
Forest Air Service.....	26
Better Pulp Market in Denmark.....	26
Mullen Bros. Paper Co. Creditors to Get Dividend....	28
Land and Timber Co. Financially Involved.....	28
Kalamazoo Vegetable Parchment Entertains.....	28
Bryant Paper Co. Has Outing.....	28
Coal Shortage Serious in Miami Valley.....	28
Curtis Tells About Paper Industry.....	30
Paper Bag Jobbers Have Outing.....	37
General News of the Wisconsin Trade.....	37
Protest Against Paper Freight Rates.....	39
Strike to Retain 8-Hour Day.....	39
Paper Making at New York College.....	39
Knowlton Bros., Incorporated.....	39
General News of the Boston Trade.....	42
All-Water Route for Sulphur to Watertown.....	48
Consider Standards in Grading Pulpwood.....	48

	PAGE
American Writing Distributors in Conference.....	48
New York Trade Jottings.....	56
Imports and Exports of Paper and Paper Stock.....	60

Editorial :

Paper Imports Continue Small.....	38
The Broken Package Evil.....	38

Technical Section:

Vocational Education in Pulp and Paper Making.....	41
Herzberg Stain Improvements for Fiber Analysis.....	43
Surface Treated Papers.....	45
Modern Washing System for Waste Paper Recovery..	49
Experiments With Rubber Latex in Paper Making.....	50
Current Paper Trade Literature.....	51
Process of Making Wood Pulp.....	51
Safety Device for Paper Winders	52
Waterproofing Fibrous Substances.....	52

Obituary:

Frederick Bertuch	54
Bradley C. Bauter.....	54
William B. Bitting.....	54
Carl Bache-Wig	54
Cornelius Cornwall	54

Market Review:

New York Market Review.....	58
Market Quotations	59
Miscellaneous Markets	62

PRODUCTION OF NEWS PRINT DURING THE MONTH OF JULY

According to Figures Just Issued by the Federal Trade Commission the Production of News Print for July of This Year as Compared With July, 1921, Showed an Increase of 28 Per Cent for Total News Print and 30 Per Cent for Total News—The Average Price from Domestic Mills to Publishers During July, 1922, F. O. B. Mill, for Standard News Was \$3.540 Per 100 Pounds.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 23, 1922. The following is a tabulation of the reports received by the Federal Trade Commission from domestic manufacturers of news print paper, from jobbers buying and selling news print paper, and from publishers using news print paper. Import and export statistics of the Department of Commerce are also included in the review. Whenever possible, the figures for 1922 are compared with those for the corresponding period of 1921, 1920, 1919 and 1918.

The figures which follow show the results of the Commission's tabulation for June, 1918 to 1922, inclusive:

	Number of mills	Stocks on hand 1st of month Net tons	Produc- tion Net tons	Ship- ments Net tons	Stocks on hand end of month Net tons
Total News Print:					
July, 1922	82	23,367	120,839	123,050	21,156
July, 1921	92	26,629	94,247	95,357	25,519
July, 1920	89	23,990	129,853	131,821	22,022
July, 1919	76	26,115	113,929	118,819	28,225
July, 1918	67	26,161	108,523	109,772	24,912
Total (7 mos.) 1922	..	23,934	810,961	813,759	21,156
Total (7 mos.) 1921	..	24,761	709,695	708,939	25,517
Total (7 mos.) 1920	..	15,369	889,477	882,824	22,022
Total (7 mos.) 1919	..	19,408	785,070	776,253	28,225
Total (7 mos.) 1918	..	31,713	743,377	750,178	24,912
Standard News (Included in Total News Print):					
July, 1922	69	18,078	111,682	113,394	16,366
July, 1921	74	22,104	86,139	87,379	20,964
July, 1920	74	20,976	118,810	120,659	19,127
July, 1919	54	20,023	101,850	98,548	23,325
July, 1918	50	19,812	98,223	99,400	18,635
Total (7 mos.) 1922	..	19,507	754,701	757,942	16,366
Total (7 mos.) 1921	..	19,616	651,721	650,373	20,964
Total (7 mos.) 1920	..	12,338	816,100	809,311	19,127
Total (7 mos.) 1919	..	15,656	711,175	704,506	23,325
Total (7 mos.) 1918	..	26,482	668,361	676,208	18,635

Note—Above figures for total news print do not include hanging paper.

The average production of total news print and standard news, based upon the total combined production for the years 1917 to 1921, inclusive, amounted to 110,000 tons of total news print, and 99,700 tons of standard news, for a period corresponding to July. The actual production for July, 1922, amounted to 120,839 tons of total news print and 111,682 tons of standard news, which, for total news print was 10 per cent above the average for the five-year period, and for standard news 12 per cent above the average.

The production of news print for July, 1922, compared with July, 1921, shows an increase amounting to about 28 per cent for total news print, and 30 per cent for standard news.

The production for July, 1922, compared with July, 1920, shows a decrease of 7 per cent for total news print, and 6 per cent for standard news.

The production for July, 1922, compared with July, 1919, shows an increase of 6 per cent for total news print, and 10 per cent for standard news.

The production for July, 1922, compared with July, 1918, shows an increase of 11 per cent for total news print, and 14 per cent for standard news.

Mill stocks of both total news print and standard news decreased during July, 1922.

Loss of Production

The following tabulation shows idle machine time reported to the

Commission for the month of July, 1922. This does not include mills shut down during the entire month:

Reasons	Number of machines	Hours idle
Lack of orders	11	1,637
Repairs	10	324
Other reasons	31	494

Imports and Exports

The imports and exports of printing paper not dutiable (practically all news print) and of wood pulp for the month of June, 1922, compared with the month of June, 1921, were as follows:

	June, 1922, Net tons	June, 1921, Net tons
Imports of news print (total)	84,336	46,220
From Canada	76,068	41,662
Germany	1,725	97
Norway	715	56
Finland	2,256	1,062
Sweden	3,572	2,600
Other Countries	0	743
Exports of news print (total)	2,902	601
To Argentina	603	.....
Japan	212	.....
Cuba	1,290	278
Canada	81	13
Philippine Islands	237	121
Other Countries	550	189
Imports of ground wood pulp (total)	15,951	8,117
Imports of chemical wood pulp (total)	78,931	36,274
Unbleached sulphite	27,639	16,454
Bleached sulphite	16,168	13,020
Unbleached sulphate	34,144	12,122
Bleached sulphate	980	678
Exports of domestic wood pulp	2,167	2,143

The imports of news print for June, 1922, were 38,116 tons more than for June, 1921. The exports for June, 1922, were 2,302 tons more than for June, 1921.

The tonnage to "other countries" under "Exports of News Print" for June, 1922, includes 77 tons to Uruguay, 100 to Mexico, 74 tons to China, and 107 tons to Colombia.

Jobbers' Tonnage

The following tabulation shows the news print tonnage reported by jobbers during the month of July, 1922, compared with July, 1921, 1920, 1919 and 1918, together with commitments to buy and sell:

	On hand first of month Net tons	Received during month Net tons	Shipped during month Net tons	On hand end of month Net tons	Commit- ments to buy Net tons	Commit- ments to sell Net tons
Rolls, July, 1922	1,374	10,543	10,499	1,418	21,450	17,830
Rolls, July, 1921	1,587	8,484	8,511	1,560	25,135	25,373
Rolls, July, 1920	2,503	5,976	5,495	2,984	27,547	29,423
Rolls, July, 1919	3,360	3,530	3,603	3,287	42,174	49,176
Rolls, July, 1918	3,396	2,436	2,789	3,043	34,472	36,668
Sheets, July, 1922	3,860	3,042	3,170	3,732	4,519	3,154
Sheets, July, 1921	4,033	2,120	2,218	3,935	5,139	3,864
Sheets, July, 1920	2,814	3,481	3,042	3,253	4,150	3,057
Sheets, July, 1919	6,132	2,726	3,118	5,740	4,384	3,395
Sheets, July, 1918	6,532	3,417	2,817	7,132	6,756	5,384
Total News Print:						
July, 1922	5,234	13,585	13,669	5,150	25,969	20,984
July, 1921	5,620	10,604	10,729	5,495	30,274	29,237
July, 1920	5,317	9,457	8,537	6,237	31,697	32,480
July, 1919	9,492	6,256	6,721	9,027	46,558	52,571
July, 1918	9,928	5,853	5,006	10,175	44,228	42,052

Stocks of rolls in the hands of jobbers at the end of July were 44 tons more than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 128 tons less at the end of July than at the beginning of the month. The net decrease in the total stocks of news print in the hands of jobbers at the end of July amounted to 84 tons.

Commitments to buy roll news were 3,620 tons greater than commitments to sell. Commitments to sell sheet news were 1,365 tons less than commitments to buy. Total commitments to sell both rolls and sheets were 4,985 tons less than commitments to buy.

Publishers' Tonnage

Monthly tonnage reports from 694 (a) of the most important newspaper publishing concerns and associations grouped according to the principal business sections of the United States together with a separate tabulation for the agricultural publications, show the following results for July, 1922:

Location of publishers (b)	Number of con- cerns	On hand first of month Net tons	Received during month Net tons	Used and sold during month Net tons	On hand end of month Net tons	In transit end of month Net tons
New England	80	16,147	16,220	15,373	16,994	1,833
Eastern States	179	49,639	59,080	57,398	51,321	9,947
Northern States	134	40,132	37,215	34,520	42,827	8,712
Southern States	82	9,065	9,734	9,622	9,177	4,574
Middle West	154	28,010	25,058	26,036	27,032	6,738
Pacific Coast	38	17,198	16,052	15,434	17,816	2,267
Farm papers (c)	7	6,194	1,162	1,113	6,243	96
	694	166,385	161,521	159,496	171,410	31,117

(a) This number represents a larger number of publications.

(b) New England includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont; the Eastern States include Delaware, the District of Columbia, Maryland, New Jersey, New York and Pennsylvania; the Northern States include Illinois, Indiana, Michigan and Ohio; the Southern States include Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia; the Middle West includes Arizona, Arkansas, Colorado, Idaho, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wisconsin and Wyoming; the Pacific Coast includes California, Oregon and Washington.

(c) The farm papers for the most part use special grades of news print instead of standard news.

Publishers' stocks increased 5,025 tons during the month. Average daily tonnage used during July was 422 tons less than the average used in June.

Publishers' stocks and transit tonnage on July 31st represented 41 days' supply at the existing rate of consumption.

Publishers' and jobbers' total stocks and tonnage in transit on July 31 aggregated 210,677 tons.

The domestic consumption of standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually, for July, 1922, when compared with July, 1921, shows an increase of 14 per cent and an increase of 21 per cent when compared with July, 1920.

The above metropolitan dailies held 59 per cent of the tonnage on hand at the end of the month.

Average Prices Paid by Publishers

The weighted average price of contract deliveries from domestic mills to publishers during July, 1922, f.o.b. mill, in car load lots, for standard news in rolls was \$3.54 per 100 pounds. This weighted average is based upon July deliveries of about 40,000 tons on contracts involving a total tonnage of approximately 435,000 tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian mills of about 32,000 tons of standard roll news in carload lots, f.o.b. mill, in July, 1922, was \$3.476 per 100 pounds. This weighted average is based upon the July deliveries on contracts involving about 152,000 tons of undelivered Canadian paper.

The weighted average market price for July, of standard roll news in carload lots, f.o.b. mill, based upon domestic purchases totaling about 10,000 tons, was \$3.551 per 100 pounds.

No Decided Decline in Paper Production

"Despite the usual dullness, there has been no decided decline in paper orders or production," says the monthly review of the paper industry by *The Paper and Pulp Industry*, the official bulletin of the American Paper and Pulp Association. "The orders and production are now above the normal level.

"There is every indication that the fall will show a continuation of the improvement in demand which now has been evident for about eight months. The depletion of the country's coal reserve has greatly increased the cost of fuel of many mills, and is adding materially to the cost of paper. The labor situation has changed very much during the last few months. There are no men looking for employment, and wages have even been advanced in some directions.

"Magazine advertising for the first seven months of the year has averaged 109 per cent of the average of the years 1915, 1916, 1917 and 1918."

Denver to Have \$500,000 Paper Mill

DENVER, Col., August 21, 1922.—Actual construction has begun on the Myers Pulp and Paper Company's mill, Denver's newest industry, which is being built, in conjunction with a box factory, on a twenty-acre site north of Denver, near Riverside cemetery on the Brighton road.

The enterprise will involve the expenditure of about \$500,000 and when complete will give employment to a large number of workers, with an annual payroll amounting in all to more than \$250,000, officials of the company declare.

Besides production of board and container stock, wall board and sheeting papers, which will be manufactured at the mill, the factory will open a market for the sale of low-grade waste paper in Denver.

The Myers Pulp and Paper Company determined on Denver as the location for the new mill after a careful survey of conditions and the market in the Rocky Mountain district.

Besides the products made from the low grade waste paper collected, the mill expects to manufacture products from wood pulp taken from its own timber limits along the Moffat road.

At the start the plant will manufacture 15,000 tons of paper products annually, but the mill will have a capacity of 30,000 tons with additional buildings.

With the mill will be erected a box factory—a Denver concern—to cost \$35,000 for each of three units, which will absorb the entire products of the new paper plant temporarily.

Power contracts have been closed by the new mill for a 10-year period, and the plant will be equipped with the most modern electrically driven machinery.

Six buildings will comprise the paper mill. The pulp mill and beating room will be a two-story structure, 164 by 128 feet, while the paper machine room will be two stories, 42 feet wide by 256 feet long. The wood room will be of two stories, 47 feet wide and 84 feet long. The boiler and engine building will be two stories, 47 feet wide and 84 feet long. The laminating room will be one story, 30 feet wide and 174 feet long. The finishing room will be one story, 64 feet wide and 84 feet long.

The box factory will be a one-story brick structure for each of its three units. Each building will be 48 feet wide and 80 feet long.

The water works system to supply the mill will necessitate a tank 125 feet high with 50,000 gallons capacity. Each of the main buildings will be of concrete with concrete floors and steel crust roofs.

The paper mill expects to supply employment to seventy-five workers from the start, while a force of twenty-five men will be required daily at the box factory. The wood operations in the Colorado timber district will furnish jobs to a score of other workers.

Officers and directors of the Myers Pulp and Paper Company are Charles B. Myers, of Chicago, president; A. E. Millington, who recently moved his family to Denver from Milwaukee, vice-president; Willbur F. Denious, of Denver, secretary and treasurer; C. R. Rudy, of Denver, sales manager and director, and Thomas F. Carey, of Chicago, director.

Quantities of Pulpwood Arriving at Bath

[FROM OUR REGULAR CORRESPONDENT]

BATH, Me., August 21, 1922.—Bath is again a center of pulpwood loading activities, the Pejepscot Paper Company having re-established its discharging station here, following the destruction by fire of the plant at Belfast. The pulpwood is brought here from the Canadian provinces, where the Pejepscot Company owns timberlands, and is transferred to freight cars at the wharves here and then shipped to Pejepscot for consumption in the paper mill. War conditions forced the Pejepscot Company to leave Bath a few years ago to locate at Belfast, but with the return of normal wages and the loss by fire of the Belfast plant, the company again located in Bath, which is nearer its mill. Great quantities of pulpwood have been arriving of late, crews now working 24 hours a day.

CHANGE WOOD PULP CLAUSES NOT TO ANTAGONIZE CANADA

At Instance of Senator Oddie Paragraphs Are Stricken Out in New Tariff Bill Which He States Would Not Improve the Situation—Purpose of Giving Free Entry to the United States of News Print and Wood Pulp, He Declares Is to Protect the American Consumer of These Commodities Against the Deficiency in the Domestic Production—May Make Change Later.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 23, 1922. The Senate, in passing the tariff bill last week, at the instance of Senator Oddie, of Nevada, struck out the proviso in paragraph 1610 devoted to mechanical groundwood pulp, and paragraph 1659, which is the standard news print paragraph. These paragraphs, as they were finally passed by the Senate, now read:

"Par. 1610. Mechanically groundwood pulp, chemical wood pulp, unbleached or bleached, including pulp board in rolls, for use in the manufacture of wall board."

"Par. 1659. Standard news print paper."

It is understood, of course, that both of these paragraphs are contained in the free list of the bill. The changes in these two paragraphs were made with the approval of the majority of the Finance Committee, and action was taken on them without roll call.

Senator Oddie also sought to have rotogravure paper, such as is used in the picture sections of Sunday editions of metropolitan papers, placed on the free list, but his amendment was rejected without a roll call.

In striking out the provisos of these two paragraphs, Senator McCumber, chairman of the Finance Committee, called attention to the fact that this matter could be taken up in conference, and it is possible that a change will be made when the bill is finally passed into law.

Would Unnecessarily Antagonize Canada

In discussing his amendment, Senator Oddie said that it modified the language adopted by the House by striking out the "imposition of a 10 per cent ad valorem duty, which might be imposed in case a foreign country forbids or restricts exportation." In taking this matter up further, Senator Oddie said:

"The manufacturers in the United States are able to obtain their wood from the freehold lands of Canada only, but are prevented from obtaining any wood from the so-called crown lands, which are comparable to our public lands, for the reason that Canada has adopted a very strict policy with regard to the cutting of timber from the crown lands in three of her Provinces, just as the United States has adopted policies restricting the exploitation of its timber, mineral and oil lands.

"The imposition, therefore, of a 10 per cent ad valorem duty on items which have been made the subject of regulation by law or otherwise by the Canadian Government would, it is feared, unnecessarily antagonize Canada, without in the slightest affecting the situation, which would result in the imposition of a flat duty of 10 per cent ad valorem on all news print paper, mechanically groundwood pulp, and chemical wood pulp.

"The effect of these amendments is to remove the 10 per cent penalty which, if allowed to remain, will positively nullify the action of the Senate in placing news print paper and its component elements on the free list. However, it leaves a retaliatory clause which protects the American producer and consumer against any export duty or other export charge which might be imposed.

"I will state, Mr. President, that when Congress placed these

items on the free list, in the face of conditions existing today, it showed its intention to keep them on the free list, and this rider in the form of a retaliatory clause, which ipso facto, has the effect of taking them off the free list, should be eliminated, and my amendments eliminate it.

Protection Against Deficiency in Production Here

"The purpose of giving free entry to the United States of news print paper and wood pulp from Canada is to protect the American consumers of these commodities against the deficiency in the domestic production. To impose the prescribed retaliatory duty would be inconsistent with this object and only result in aggravating the shortage and in increasing the cost to American consumers of news print and pulp, both domestic and imported.

"The Canadian regulations, at which these clauses appear to be aimed, are based upon economic necessities of the Dominion of Canada and are not the result in any degree of commercial antagonism to the United States.

"If, therefore, the United States has a substantial basis on which to seek the abrogation of the embargo it would be better to proceed by negotiation rather than by coercive measures, since there is nothing in the history of Canadian trade policy to lend support to the suggestion that Canada will yield under duress what it will not yield voluntarily.

"It is quite obvious that the retaliatory clauses would become mandatory in their operation whenever any action on the part of the President should be evoked, and as such are tantamount to fixing a flat duty of 10 per cent ad valorem upon news print paper and mechanical and chemical wood pulp, thereby nullifying the intent of the Senate that these commodities are entitled to a free entry on their merits."

Duty In Paper and Wallboard

The Senate in passing the tariff bill last week inserted a new paragraph in connection with paper and wall board. Paragraph 1302 as it finally passed, reads as follows:

"Par. 1302. Paper board, and pulpboard, including cardboard, and leather board or compress leather, not laminated, glazed, coated, lined, embossed, printed, decorated or ornamented in any manner, nor cut into shapes for boxes or other articles and not specially provided for, 5 per centum ad valorem, pulpboard in rolls, for use in the manufacture of wallboard: Provided, That for the purposes of this act any of the foregoing less than nine one-thousandths of an inch in thickness shall be deemed to be paper; sheathing paper, roofing paper, deadening felt, sheathing felt, roofing felt or felt roofing, whether or not saturated or coated, 10 per centum ad valorem.

"If any country, dependency, Province, or other subdivision of government imposes a duty on any article specified in this paragraph when imported from the United States in excess of the duty herein provided, there shall be imposed upon such article, when imported either directly or indirectly from such country, dependency, Province, or other subdivision of government, a duty equal to that imposed by such country, dependency, Province, or other subdivision of government on such article imported from the United States."

I. V. Sutphin Paper Co. Damaged by Fire

[FROM OUR REGULAR CORRESPONDENT]

ATLANTA, Ga., August 19, 1922.—Sparks from passing locomotives was given as the cause of the fire which caused \$50,000 damage to the I. V. Sutphin Paper Company, 476 Whitehall street, last week.

The building was so badly damaged that only the lower floor could be used, but the company announced that business was being conducted as usual.

Buy Your Kraft Pulp Now

**STORA
KORSNÄS
HUSUM**

May We Quote?

A. J. PAGEL & CO., Inc.

347 Madison Avenue

New York City

UNCERTAIN CONDITIONS IN THE PHILADELPHIA MARKET

In Spite of All the Disturbing Factors, However, a Trend Toward More Active Buying Is Noticed—While Prices Generally Are Stiffening and in Some Cases Increasing a Reduction Is Announced on a Representative Line of Kraft—Mills Are Increasingly Being Handicapped by the Coal Shortage—Franklin Paper Co. to Improve Five-Story Warehouse at 902 Locust Street Recently Purchased.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., August 22, 1922. Trade conditions in both the fine and the wrapping paper divisions in Philadelphia during the past week of continuously sultry weather and with the vacation period at its height, were as varying and uncertain as the labor situation in coal mines and on railroad lines, on both of which they were in part dependent. But through it all there was in the entire paper trade a trend towards better buying in the sense both of more orders and of larger ones just as there was in the labor negotiations a more definite movement towards peace.

An Anomalous Condition

The trade noted a rather anomalous condition with regard to prices as they were quoted by the mills. On the one hand there was the recession in quotation of a mill regarded as the dominant factor in the kraft situation, while on the other hand there continued to come withdrawal of prices, notices that orders for future delivery preferably would not be taken at this time and that on a larger number of grades than ever before business was taken on the basis of a price to be determined at the time of delivery. The trade looks upon the No. 1 Kraft as a fundamental and it was rather difficult to reconcile lowering prices on such a basic grade as this with increasing prices—or at least increasing price tendency—on the other grades. A majority of those who attempted to reconcile the apparently contradictory conditions took the view that there was in the paper situation the same uncertainty and perhaps proclivities to gamble, as were manifesting themselves in other lines. The general conviction, however, is that rightly or wrongly most of the fine paper quotations will move upwards and that those of the coarser grades will at the very least be steady for some time to come. The market for the better grades of printing papers became a little more active during the week although there still remains large room for improvement, but the coarse paper situation virtually was without change. Mill demands continued steady to firm for all grades of stock with the continued exception of hard white and was quite active for the special grade of container stock made up in this market, the prevailing price of which was 1.15 or better.

Production Varies

Paper production, and board as well, in the local mills, varied greatly and in direct proportion to the amount of coal actually in the bins or on the cars or of certain delivery. The largest producer, the Philadelphia Paper Manufacturing Company in Manayunk, continued at the limit of production when coal supplies were ample, and when shortage was threatened diverted its force of employees towards the piling up of stock, veritable mountains of which are now on the premises. Close down, but only temporarily, of some of the other mills was necessitated not by lack of orders, but by conservation of power because of fear of the future. However, toward the close of the week when there was apparent the likelihood of any early termination of the strikes in the mines and

the impairment of railroad traffic, the wheels went around again at the old rate.

On Auto Tour of the U. S.

R. P. Wood, recently connected with the Service Department of the Philadelphia office of the American Writing Paper Company in the Bourse, and who with Mrs. Wood and two friends lately set out on a two-year automobile lecture trip on paper making, printing salesmanship and allied matters, has just made the first report of progress. The letter was dated at Lansdale, Pa., and in it Mr. Wood briefly referred to his automobile and particularly the trailer on which he has painted in large letters this inscription, "U. N. V. U. S.," "On our way on a two-year tour of the United States." Mr. Wood gave as his general itinerary, Albany, Rochester, Cleveland, Chicago, then south into Texas for the winter, proceeding through New Mexico, Arizona, and California, thence up to Seattle and on to British Columbia, returning by way of Minneapolis back into the Southland, and finally in the spring of 1924 through the central States and thence across into New England, and finally two years hence "Back to Home in Philadelphia." Mr. Wood announced that he could be addressed up until September 10 in care of the Cleveland Lodge, Cleveland, Ohio, of the Order of Elks.

Coal Shortage Closes Mills

The mills of the E. T. Garrett Company and of Edwin Garrett, both operating, but independently on tissues, have been closed down on account of coal shortage for an undetermined period.

Franklin Paper Co. to Build

The Franklin Paper Company now located at 1001 Market street, shortly will begin reconstruction and extension of the five-story building at 902 Locust street, which it recently purchased, involving an expenditure of about \$10,000 for the reconstruction work. It hopes to be an occupant for both its offices and its warehouses by December 1.

General News of the Trade

The Reading Mill of the Reading Paper Mills Company, whose offices are at 308 Chestnut street, has been running intermittently because of the coal shortage, but at the close of the week was in full operation on its special line of high-grade rag book with private water mark on order from publisher. The work force of the Tulpehocken rope mill is being gathered together for early resumption of production after the close down of almost a year.

John K. Mohr, formerly manager of the Reading Paper Mills, but now engaged in his own business with offices in the Liberty Building, is on a tour of Europe, accompanied by Mr. and Mrs. Norman McLeod.

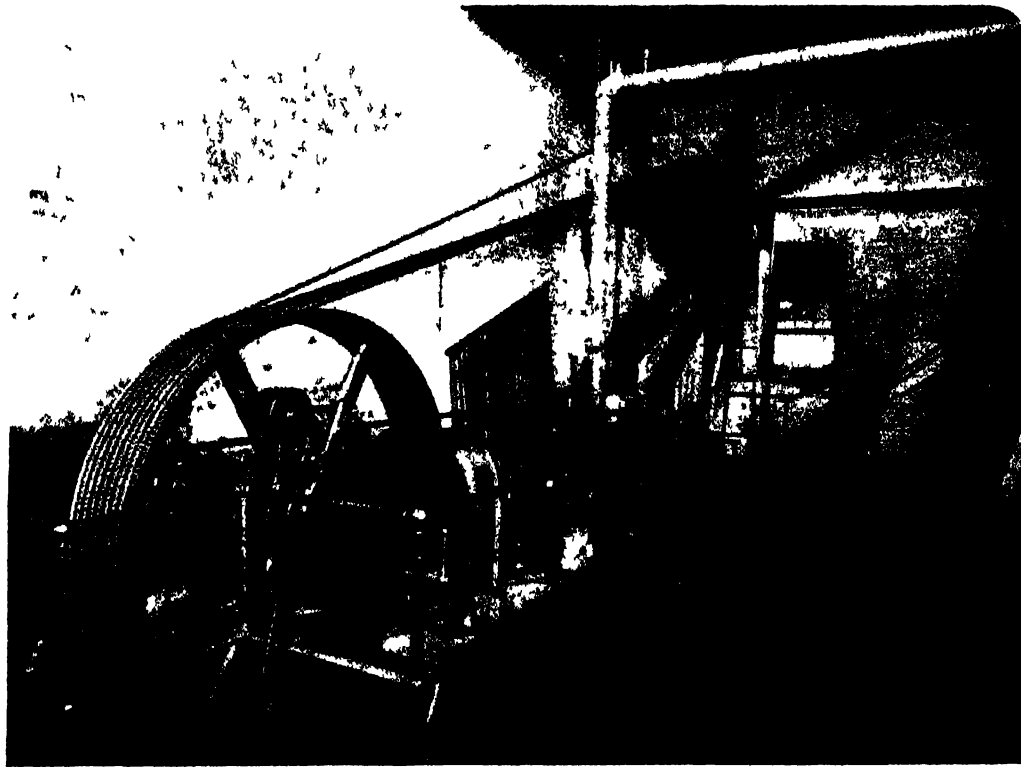
President Edward D. Hemingway, of the Hemingway Company, is with Mrs. Hemingway in camp at Coopers, Maine, where he will remain until the close of next month.

Thomas F. Simmons, of John Simmons' Sons, left during the week on an automobile vacation trip with the Poconos as his immediate objective, but the thereafter not determined on.

President Norbert A. Considine, of the Paper House of Pennsylvania, left the city during the week for a vacation rest in Ocean City.

The Beck Paper Company during the week made an attractive display illustrating the printing and lithographing possibilities in black and in color of the Beck Half-tone Blanks, made by the Falulah Paper Company.

The Universal Waste Products Company, packers of paper stock exclusively on a large acreage at 25th and Callowhill streets, is seeking a new location and preferably one on a river front, because the site of 2½ acres it now occupies shortly will be required by the City for development purposes in connection with the forthcoming Philadelphia Sesqui-Centennial celebration. Superintendent William G. Biles has secured options on several sites and decision shortly will be reached.



Equip Your Rope Drive
With Columbian Tape-Marked Pure Manila Transmission Rope

Constant effort, exhaustive tests, scientific study and analyses in the Columbian mills have resulted in placing Columbian Transmission Rope in its enviable position as a leader.

Every Columbian Transmission Rope contains throughout its length the Columbian red, white and blue *Tape-Marker* guarantee. It is distinctly worded "Guaranteed Rope, made by Columbian Rope Co., Auburn, N. Y."

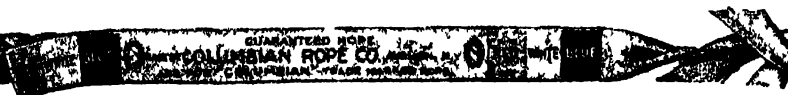
Let our Service Department solve your Power transmission problems. It costs you nothing; neither does it place you under any obligation whatever.

Write today.



Columbian Rope Company
 342-60 GENESEE STREET
 AUBURN, "The Cordage City" N. Y.

Branches New York Chicago Boston Houston Baltimore



SUMMER QUIETUDE PERIOD IN TORONTO PAPER MARKET

August Has Been the Quietest Month This Year But Active Resumption Is Looked for Early in August—Heavy Demand Continues for News Print Which Is Said to Be None Too Plentiful—Busy Season in Pulpwood Cutting Expected to Start in Northern Ontario Soon—Good Progress Being Made on the Sub-Structure of the New Plant for the Fort William Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., August 21, 1922.—August has been the quietest month of the year in the paper trade so far as the jobbing trade is concerned. Many members are still away on their holidays and will not return until the first week in September, when the big Canadian National Exhibition will be in progress. This event generally brings to Toronto many buyers from various parts of Ontario and orders are frequently placed for large consignments of paper to meet fall demands. The printing trade is also feeling the effect of the present quiet period.

Some paper mills are running pretty nearly to capacity, but there has been a noticeable slackening down in others. Whether the mills will have a busy season this fall or not depends upon an early settlement of the coal strike, the resumption of regular transportation facilities and the availability of cars. Certain mills have only a few weeks' supply of coal on hand and are getting rather anxious concerning the future.

A redeeming feature of the whole situation is that the demand for news print keeps up actively. News, according to some producers, is not any too plentiful. Whether prices will be advanced during the next few weeks in accordance with the trend of quotations on the American side, is not definitely known. Generally speaking, however, the Canadian situation is closely allied to that across the border. It may be depended upon, however, that there will not be any reduction in the present contract rate of \$70.00 per ton, when the matter of new quotations comes up at the end of next month.

Book papers have sagged somewhat in value and some mills are quoting a cent a pound less than they did a month ago. Bond papers remain unchanged, but there is a slightly upward tendency in the higher quality lines.

The paper box trade has developed considerably during the past few weeks and most plants are now running pretty well up to capacity. A fair volume of business is reported by manufacturing stationers. In the rag and paper stock market there is a good call for most lines, especially for No. 1 white shirt cuttings.

Busy Time in Building Papers

The active building campaign, particularly in the house line, that has been going on all summer, has reflected itself in a steady demand for sheathing papers of all kinds. The Strathcona Paper Company, of Strathcona, Ontario, report that it is running full time on building and board lines. It has been making alterations to its plant during the past summer in order to be in a position to take care of any increases that come along when business really gets settled down to normal.

Pulpwood Cutting Will be Active

It is expected that there will be considerable activity in Northern Ontario pulpwood cutting during the next few weeks. The Ontario Paper Company, of Thorold, which recently acquired some valuable limits from the Potter Lumber Company, of Matheson, intend getting out 15,000 cords of pulpwood on the newly acquired land and will erect a cutting up and rossing mill at that point.

The Hawk Lake Lumber Company, of Monteith, Ontario, which is

also concerned in the recent deal with the Potter Lumber Company, intends cutting about 40,000 cords of wood this season, which will be rossed. The company will erect a rossing plant at Wasach at mileage 208, on the Timiskaming and Northern Ontario Railway, during the coming spring which will have a capacity of 20,000 cords rossed.

Introduction of Long Price List

An arrangement has been concluded between the Toronto Typothetae and the wholesale paper dealers of Toronto whereby the long price list will go into effect early next month. This list practically acknowledges the printer as a retailer of paper. The items covered by the retail list are: Commercial printing papers for manufacture or re-sale; envelopes in less than case lots; job lots and seconds. Lists issued by the jobber will quote a price 25 per cent above the net wholesale price and retailers will be given a discount of 20 per cent from the retail price list.

Good Progress on New Paper Mill

The work of driving the last of the twenty-one hundred concrete piles for the new paper mill of the Fort William Paper Company at the Mission site, Fort William, has been completed and the concrete foundation walls are now going up. About two hundred men are employed on construction, which is being carried out under the direction of the company's own engineers. It is expected that the buildings will be ready for the installation of the machinery late this fall and the paper making machines will be put in during the winter.

Rolling Stock for New Abitibi Line

The first of the rolling stock for the Abitibi Railway and Navigation Company recently arrived in the shape of twelve flat cars for hauling logs and pulpwood. The cars are the regulation length and fitted with all safety devices. Some of them are already in use. The railway line, which is being built by the Abitibi Power and Paper Company from Iroquois Falls to Hughes, will greatly assist the company in the hauling of pulpwood, supplies for the mill, etc.

Fifty Years with Toronto Paper Firm

An interesting event took place at the office of Warwick Brothers & Rutter, manufacturing stationers, King street West, Toronto, last week when Thomas Barff completed fifty years of service with the firm. He was presented with an address and a well-filled purse. Mention was made of the fact that Mr Barff was the only member of the staff who knew the late William Warwick, the founder of the business.

Toronto Paper Firm's Unique Publicity

Some unique advertising is being done by the Victoria Paper and Twine Company, Toronto, which is sending out to its customers a neat card, suitable for hanging on office walls. Each card contains a timely and forceful article on such themes as "Loyalty," "Freedom," "Patriotism," "Co-operation," "Discipline," etc.

Notes and Jottings of the Trade

Walter S. Boyd, sales manager of the Deerfield Valley Paper Company, Munroe Bridge, Massachusetts, was in Toronto recently calling upon the trade. He was formerly sales manager for Price Brothers & Co., of Quebec.

G. R. Warwick, A. F. Rutter, H. C. Hood, and William Warwick, who constitute the executive staff of Warwick Brothers & Rutter, manufacturing stationers, Toronto, have returned from a holiday trip made by motor through New York State.

Col. Thomas Gibson, vice-president of the Spanish River Pulp and Paper Mills, Limited, Toronto, was in Sault Ste. Marie during the past week in company with several directors of the Lake Superior Corporation. The various plants were inspected.

Charles V. Syrett, manager of the Victoria Paper and Twine Company, and Mrs. Syrett, Toronto, have returned from a holiday trip to Montreal and other points East.

Edward Newell, who is head of the Dominion Envelope and Car-

(Continued on page 24)

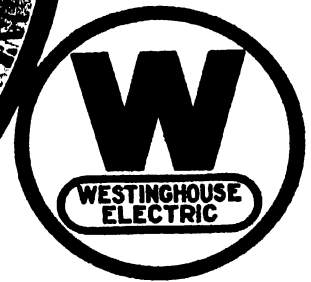
Westinghouse



Sectional Paper Machine Drive

98 and 166-inch
Pusey & Jones
Fourdrinier Book
Machines, 250 to
500 feet per min-
ute.

98-inch Machine
Started July 25 and
the 166-inch. Oct.
22, 1921.



West Virginia Pulp & Paper Co.

The Westinghouse Sectional Paper Machine Drives in the Tyrone (Pa.) mill of the West Virginia Pulp and Paper Company have been in service about ten months.

The performance of this, and similar installations, recommends Westinghouse Sectional Paper — Machine Drive to the consideration of all paper manufacturers.

Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.

Sales Offices in All Principal American Cities

SOME MILLS IN MIDDLE WEST CLOSED BY COAL SHORTAGE

Grave Concern Is Expressed as to How the Fuel Situation That Is Likely to Arise in the Next Few Weeks Is to Be Met—Otherwise Prospects Are Excellent for a Big Fall Trade—Colter Rule, Manager, and W. E. Scott, Assistant Manager of the Whitaker Paper Co., Resign and Are Succeeded by F. H. Alling and C. H. Runyan—Other News of the Chicago Paper Trade.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, August 19, 1922.—Though the coal situation has taken a different aspect during the past few days there is much excited anticipation among the paper men as to how the coal shortage is to be met. Some mills have closed up because of lack of coal and some mills in the Northern and Middle West sections are burning a mixture of wood and coal. Reports are prevalent in paper offices that coal will last but a scant two to three weeks at the very longest.

The many kinds of paper products have gone up considerable in the last forty-eight hours and buyers of large amounts of paper are expecting higher prices within the next ten days.

Paper salesmen reply that orders have been considerably delayed because of the railroad strike, but look forward to a settlement within the next two weeks. Orders are being received in large quantities.

Whitaker Paper Co. Changes

The Whitaker Paper Company, 212-220 North Sangamon street, announced several changes in the firm which have taken effect during the past month. Colter Rule, manager, and W. E. Scott, assistant manager, have resigned and their resignations have been accepted by the company. These two men have been with the company for some time and are well known to the trade in the Middle West. F. H. Alling, formerly general manager of the bag departments of the company's Western divisions, has been elected manager. C. H. Runyan, of the Whitaker company, has been selected as assistant manager. Mr. Runyan has been with the Whitaker company for about two years, having held the position of salesmanager in several other companies of the Middle West before coming to the latter one.

General News of the Chicago Trade

A. P. Story, treasurer of the Chillicothe Paper Company, Chillicothe, Ohio, transacted business in Chicago on August 15. Mr. Story said that all the mills were running to full capacity and would be able to do so for a considerable time.

Miss B. A. Dauback, of the Forsythe Paper Company, is spending three weeks vacation traveling in the East. Miss Dauback had intended to visit in California, but the railroad strike made it impossible for her to make the trip.

J. L. Forsythe, Western representative of Atterbury Brothers, New York, and whose headquarters are in Chicago, states that business is very good, but the situation at the mills looks serious. Mr. Forsythe covers all territory West of Buffalo.

C. L. Rheinart, A. Entwistle and several other salesmen of the Bradner Smith Company, have returned from their vacations. All these men have returned full of pep and looking for big business.

The Champion Coated Paper Company, 111 West Washington street, has arranged a fine display of paper making materials that is being shown at their offices. "Bob" Butterworth, manager of the Chicago office, reports that local customers and out-of-town trade are very much interested in the display.

The Seaman Paper Company, 10 South LaSalle street, displayed

an exhibit at the "Pageant of Progress" made up of numerous first page covers of the many different publications for which it sells paper. It also displayed pictures showing the different operations at the company's mills.

Hugh Strange, of the John Strange Paper Mills and Pail Company, transacted business in Chicago, August 17. Mr. Strange is manager of the mills at Menasha and reports that everything is running to full capacity. Mr. Bull, advertising manager of the Bradner Smith Company, Chicago, left August 16 on a business trip to Holyoke, Mass.

H. J. Keenan, of the Western Newspaper Union, Omaha, is expected in Chicago about August 25. Mr. Keenan will visit amongst the different mills in the Middle West.

A. J. Austin, of the Moser Paper Company, is spending three weeks' vacation traveling in Michigan.

W. T. Morgan, display manager of the Bradner Smith Company, is spending his vacation at Channel Lake, Antioch, Illinois. He reports that business is very good, but shipments are delayed from the many mills in the United States.

J. E. Thorndyke, of Bradner Smith Company, has returned from a trip throughout the Northwest. While in the West Mr. Thorndyke visited with his son and daughter.

QUIET DEMAND IN TORONTO

(Continued from page 22)

ton Company, Toronto, got back recently from a vacation trip down the St. Lawrence River.

James W. Sewall, of Old Town, Maine, has gone into the upper Ottawa region, in Quebec, where he has a crew completing a detailed survey and timber estimate of their holdings for McLachlin Bros., Ltd., of Arnprior, Ont.

Paper Sales, Limited, of Toronto, have been appointed Canadian representatives of white Japanese ivory cover papers, which are put out by the Royston Paper Company, of Boston.

The Ontario Government reforestation station at St. William, Norfolk County, is very active at the present time and is an important factor in the forest preservation of the province. Areas suitable for replanting are being given attention. It is expected that next year 5,000,000 young trees will be ready for distribution.

A. P. Costigane, of Toronto, safety engineer of the Ontario Pulp and Paper Makers' Safety Association, who has been spending his holidays at Big Bay Point, on Lake Simcoe, has returned home.

Fred L. Ratcliff, of the Ratcliff Paper Company, who is president of the Toronto Rotary Club, was at Batavia, N. Y., last week, on business connected with the Rotary Clubs of that district.

Albemarle Paper Mfg. Co. Expands

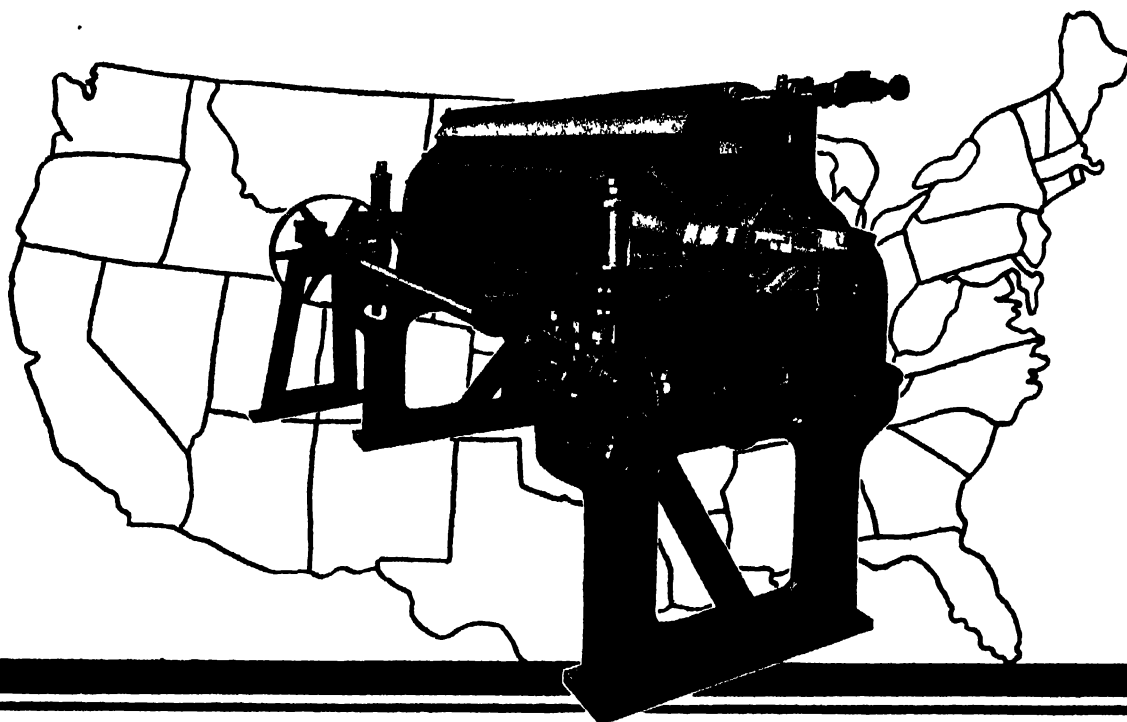
[FROM OUR REGULAR CORRESPONDENT]

RICHMOND, Va., August 21, 1922.—The Albemarle Paper Manufacturing Company will have completed by August 15 the re-building of its paper machine in the Hollywood Mill, where it manufactures famous brands of blotting paper, stereotype paper, and absorptive papers for manufacturing. The tonnage of this plant will be increased from an average daily production of 25,000 pounds to 40,000 pounds per day. A new power plant has been installed to double the capacity of its former plant. The paper machine has been rebuilt by J. H. Horne & Sons Company, and has been made modern in every respect.

Government Paper Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 23, 1922.—Knowlton Brothers Company have been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 12,000 pounds (250 reams) of 20 x 25—48 pounds of smooth granite cover paper at \$0.749 per pound in bundles. Bids for this paper were opened on August 11.



REAL EVIDENCE

There are working in the paper mills of this country making papers from a long-fibred slow-working stock

150 WALPOLE SCREENS

The reason is that the WALPOLE SCREEN is designed for the purpose of overcoming the many difficulties usually experienced in screening this kind of stock.

The stock is uniformly clean.

Production is continuous, with freedom from lumps or slime and shutdowns for washing up.

Perhaps you would like to hear the story of the WALPOLE SCREEN directly from some of these mills.

BIRD MACHINE COMPANY

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Massachusetts

Western Representatives
T. H. Sater, Jr., 1718 Republic Bldg.
Chicago, Ill.

Canadian Builders of Bird Machinery
Canadian Ingersoll Rand Co., Ltd.
260 St. James St.
Montreal, Canada

WALPOLE SCREENS

PULP AND PAPER SECURITIES AGAIN ACTIVE IN MONTREAL

Many Thousands of Shares Are Being Dealt In and All of the Leading Issues Have Made Substantial Advances in Prices—This Activity Is Believed to Be Due to the Active Demand from Abroad, Particularly for News Print and the Prospect of an Advance from \$5 to \$10 Per Ton as Soon as the Present Contracts Run Out—Spruce Falls Co. Buys New Drying Machine.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., August 21, 1922—Pulp and paper securities have once more taken the position of leaders on the Montreal Stock Exchange, and many thousands of shares have been dealt in this week. All the leading issues have scored substantial advances in price. This activity is due to the increasing demand from abroad, particularly for news print, and the prospects of an advance from \$5 to \$10 per ton as soon as present contracts run out. The exports of pulp and paper since April 1 represent an increase of \$13,700,000 over the same period last year.

New Machine for Spruce Falls Co.

The new 154-inch Fourdrinier pulp drying machine ordered some time ago by the Spruce Falls Company, Ltd., of Kapuskasing, Ont., has just been delivered at the plant, and installation is to be proceeded with immediately. The machine was built by The Karlstad Mekaniska Verkstad, of Karlstad, Sweden, the order being placed through Pulp and Paper Mill Accessories, Ltd., of Montreal, of which J. D. Volckman is manager. The Spruce Falls Company's mill is a new one, and its capacity when completed will be 240,000 pounds of sulphite fiber every 24 hours. The buildings are all ready for the installation of the machinery.

Riordon Position Improving

The Creditors Committee of the Riordon Company has sent out a report to the shareholders showing a net betterment in the Company's banking position of \$532,305 in the case of the Imperial Bank and \$528,252 in the case of the Bank of Montreal. The reports says in part:

"This is a particularly good showing, since during that period there has been expended \$268,153 on harvesting last year's logs in streams. The sales outlook is more reassuring than for any time for the past two years. The full output of pulp from both the Kipawa and Hawkesbury mills has been marketed at factory prices up-to-date, and orders are now on hand to cover the production for the summer months—a period which is usually a dull one. The Calumet sawmill has been in operation since May, and will be run day and night for the balance of the sawing season.

"One of the most important and serious questions which has faced the Riordon Company in the past year has been the possibility of the loss of the Gatineau Company's timber limits and mill properties which were bought from W. C. Edwards & Co., Ltd., and from Gilmour & Hughson, Ltd. These properties have been subject to forfeiture and sale, since the Gatineau Company has been in default on its payments. Your Committee is glad to announce that arrangements have been consummated with both W. C. Edwards & Co. and Gilmour & Hughson, Ltd., whereby this possibility is averted and the obligations on these limits and properties have been reduced to a reasonable sum.

"To sum up the result of operations today, we would emphasize the fact that large quantities of inventory material have been converted into cash, thereby building up future working capital by increasing the existing equity in the inventories over and above the bank loans; and the negotiations explained above have saved to the

company an equity in the Gatineau property, which, it is estimated, will go far in asset value to offset the bonded indebtedness."

Forestry Students to Visit Canada

R. G. Broadwood, M. C., B. S. C., I. F. S., lecturer on Forestry in the University of Edinburgh, is visiting Quebec Province to look over the lumber camps of this province in order to prepare the way for the conducting of a party of students in the forestry branch of his university here early next year; believing, as he stated, that Canada easily tops the world in this line of work, particularly in its engineering side. Up to the present, he said, most of the British Isles graduates in this profession have gone to France, Germany, Switzerland, India and even Nigeria, to finish the last lap of their curriculum, it is his own opinion that the drift should now be changed to Canada, despite the slight handicap of the expense of passage and living. He contrasted the quick and efficient work done here with that of the Himalayas, where the country is difficult, though labor is cheap, but where the average speed is "200 logs a mile a month." Mr. Broadwood will remain in this country till the end of October.

Forest Air Service

The Laurentide Air Service, Ltd., of Montreal has this year to date covered over 25,000 air miles (about 300 flying hours) in connection with forestry operations either reconnaissance, fire detection, fire fighting or transportation of supplies and equipment for surveys, fire-fighters, etc., without a single accident and only very minor delays due to mechanical trouble.

Canada Has Two Forest Experiment Stations

While forest experiment stations, like agricultural experiment stations, have long been known in Europe, they are new in Canada. The Dominion Forestry Branch of the Department of the Interior has two such stations, one at Petawawa, Ontario, and the other at Lake Edward, Quebec, with substations located in other provinces. At these stations every feature of forest growth is studied, just as agricultural problems are studied at agricultural stations and experimental farms. As the agricultural stations have added to the value of farm crops by introducing new varieties and new methods, so, it is expected, the forest experiment stations will increase the quality and quantity of forest crops by discovering what varieties do best in certain localities, and by finding out by what methods of seeding, planting, mixing of species, thinning, draining, etc., new forests can be grown most rapidly to take the place of those cut down and destroyed by fire.

Better Pulp Market in Denmark

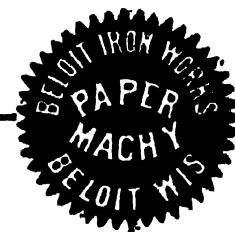
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 23, 1922.—According to a report recently received from H. Sorensen, Assistant Trade Commissioner, Copenhagen, by the Department of Commerce, the cellulose market in general has assumed a firm character, with the exception of one market, namely, the Far East. It would seem that this market had covered its requirements, the demands for cellulose having declined and prices having fallen. Another reason advanced for this change is that Canadian manufacturers are competing in this market.

Present sulphite prices are low, while prices on sulphate continue to be firm. Christiania stock exchange quotations of July 12, 1922, are as follows, per ton of 2,240 pounds f.o.b., Norwegian ports:

Easy bleaching sulphite, kr. 300; bleached sulphite, kr. 500; strong, unbleached sulphite, kr. 305; sulphate, easy bleaching, kr. 300; sulphate, kraft, kr. 305.

There seems to be a lively demand for groundwood, particularly from Great Britain. On July 12 the stock exchange at Christiania increased prices on wet and dry mechanical pulp to kr. 4.00 and kr. 5.00 respectively, making the market price on that date as follows: Prime white spruce (dry), kr. 100; prime white spruce (moist), kr. 200.



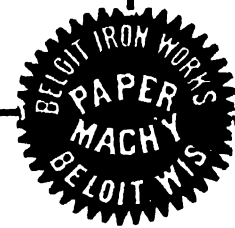
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from that time devoting
itself exclusively to the
building of

Paper Making Machines

BELOIT IRON WORKS

BELOIT, WISCONSIN, U. S. A.



MULLEN BROS. PAPER CO.'S CREDITORS TO GET DIVIDEND

Will Receive 30 Per Cent., Amounting to \$30,000 at the End of This Month—Land & Timber Co., of Escanaba, Mich., Reported Financially Involved Owing to Slump in the Demand for Pulpwood—Kalamazoo Vegetable Parchment Co. Entertains Members of the Grand Rapids Club of Printing House Craftsmen—Employees of Bryant Paper Co. Have Enjoyable Outing.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., August 21, 1922.—Creditors of the defunct Mullen Brothers Paper Company, St. Joseph, will be paid a 30 per cent dividend this month, the amount being \$30,000. It is now expected that at the September term of circuit court in Berrien county that a suit will come up for the foreclosure of a \$70,000 mortgage held by Francis Hughes Company, Chicago.

Land and Timber Co. Financially Involved

The Land and Timber Company, of Escanaba, Mich., is financially involved. While the assets exceed the liabilities, they are not liquid enough to care for the call loans and it is reported that some other means of payment must be devised. According to press reports the losses are due to the slump in the demand for pulpwood. In 1919 and 1920 this concern did a big business and was so heavily pressed for orders that an unusually heavy supply of pulpwood was contracted for. Then came the slump in the paper business and much of this pulpwood was sold at a loss of \$6 a cord, wiping out the company's capital.

Kalamazoo Vegetable Parchment Entertains

The Kalamazoo Vegetable Parchment Company, Tuesday, entertained 46 members of the Grand Rapids Club of Printing House Craftsmen. They were invited to be guests of the Parchment company by the Quimby-Kam Paper Company, of Grand Rapids.

During the morning the visitors were given ample opportunity to visit the various departments of the big plant and view the great expansion work now being carried on. Dinner was served at 11:30 in the community house. At that gathering Jacob Kindleberger, president of the Kalamazoo Vegetable Parchment Company, gave the visitors a talk on why and how the Parchment company handles its business and also its factory.

A considerable portion of the afternoon was devoted to a visit to the King and Monarch divisions of the Allied Paper Mills. Dinner was served at the Park-American Hotel. Following this Ed. T. A. Coughlin, superintendent of the coating department of the Monarch division, described the making of book paper.

Bryant Paper Co. Has Outing

Catherine Ivory's Imps were rubbing it into C. Allen Fox's Fat Men Independents, on the Long Lake lot, Saturday morning, when Pete Roundhouse, umpire, called one of the fair damsels safe at first. That raised a mad riot among the harassed fat boys, who proceeded to grab his Imps and tossed him into the lake, thereby giving opportunity to see a little knowledge of the game.

Being the opening event of the Bryant Paper Company's first picnic at Ramona, it augured well for a real lively day. The prediction was true, there being a lot of happenings before nightfall to make the day a memorable and enjoyable one for all participants.

All the contests were spirited, workers from the various divisions rooting madly for their respective contestants.

The event turned out to be one of the really big industrial outings of the year. Between 2,500 and 2,700 people gathered in the grove for the basket dinner at noon. The Bryant Paper Company

furnished ice cream and lemonade for adults, with milk for the children. The company also bought all the prizes, handled the transportation and secured exclusive use of boats and bath houses. Snugg's band played during and for the dance in the evening.

Paper Mill Watchman Shoots Negro

John Quigg, 69 years old, watchman at the plant of the Kalamazoo Vegetable Parchment Company, shot John Perkins, negro, who attacked him last Monday night. Quigg was going his rounds and as he entered the Glendale division of the concern, Perkins felled him to the floor with a piece of iron pipe. The blow failed to render Quigg unconscious and he drew his Colt's and fired two shots at his assailant. One took effect.

K. V. P. Co. Has Fire Department

The Kalamazoo Vegetable Parchment Company now has a fire department, equipped to capably handle small fires, practically any blaze up to real conflagration. The latest addition to the equipment was the purchase of a Reo speed wagon hose and chemical truck.

Coal Shortage Serious in Miami Valley

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, August 21, 1922 Inability to obtain fuel resulted in suspension of activities at the Crystal Paper Company's mill at Excello, three miles south of Middletown, the latter part of last week.

It was feared up to the time final sessions were conducted to terminate the railway strike, that other paper concerns would follow suit. In fact, the operations of several mills have been crippled as a result of the coal shortage.

Despite the adjustment of the coal miners' strike and the railway controversy, there will be no improvement in the Miami Valley situation for some time, according to statements made by coal dealers today.

It is indicated that priority orders and slow freight movements will result in delays which may mean that only small supplies of fuel will reach this section of Ohio until October.

Z. W. Ranek, general manager of the Crystal Mills, appealed to Governor Davis of this State for coal, but could secure no promise of assistance.

In order to keep the boilers going, the Crystal Paper Company was compelled to seek aid from the Vulcanite paper mill at Franklin, paying \$10 per ton for 500 tons of coal, and defraying the cost of hauling.

Mr. Ranek stated that it was his opinion many concerns soon would be feeling the effects of the coal scarcity and that other shut-downs would follow.

The situation in Piqua also is reported as critical. Several large manufacturing companies postponed until this time the stock-taking period in order to close and conserve their coal supplies.

In Dayton, paper mills and kindred establishments, including the several box and oyster pail plants, have struggled along, but face a rationing of coal due to the shortage.

Representatives of the Dayton Power & Light Company which supplies motive power to a number of such establishments not only in this city but in towns within a radius of 40 miles of Dayton attended a meeting of electric light men in Cleveland, when the matter of rationing electricity was considered.

It was said today to be extremely probable that such an arrangement would be made here, motive power being furnished in restricted quantity, while homes and business houses also would be affected.

The Miami Valley Traffic Club, which has within its representative membership practically all of the paper mill owners or managers, has forwarded a telegram to President Harding advising a "hands off policy" on the part of the Government in the railroad strike.

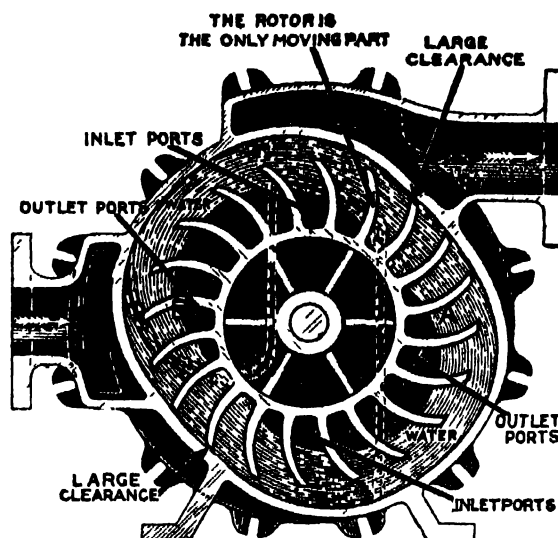
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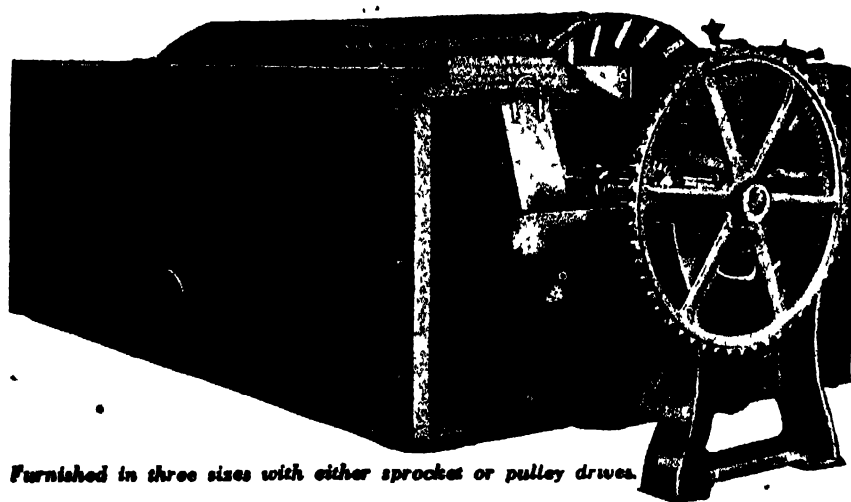
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Distinctive performance and intensified confidence in this machine as a Pulp Thickener, Save-All, Washer or Water Filter insure success in its building.

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Furnished in three sizes with either sprocket or pulley drives.

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GLENS FALLS MACHINE WORKS
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SIMPLICITY, in cylinder and vat construction, operation automatic, and without couch roll, doctor or any complicated moving parts.

DEPENDABILITY, in its simple revolving cylinder only, with nothing to get out of order, requiring little attention, and having a patented principle of maintaining wires always clean, insuring continuous performance.

PRODUCTIVENESS, enormous, through clean wires, large screening surface, patented unique method of discharge and freedom from shut-downs.

DURABILITY, by rigid construction, ample bearing surfaces, nothing to injure wires and highest grade materials.

All these enhance its value and involve upon you the duty of investigation.

F. A. CURTIS TELLS ABOUT PAPER LABORATORY

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 23, 1922.—F. A. Curtis, chief of the paper laboratory of the Bureau of Standards, Department of Commerce, in an interview had the following to say regarding the work of his laboratory which is of special interest to the paper trade in view of the standardization work which is being carried on jointly between the paper laboratory and the industry. Mr. Curtis said:

The functions of this section are the study and development of methods of testing paper, the investigation of paper-making materials, the experimental production of special types of paper, the study of paper-making processes, the development of standards and specifications for papers and the testing of paper, both for the Government and for the public.

General Conditions

It has not been necessary to purchase any large pieces of equipment during the year and there has been little change in the facilities for this work. Minor pieces of apparatus have been obtained, for the testing laboratories and especially for the paper mill, such as an electric conditioning oven, centrifuge, wire guide, large deckle straps, new lower press roll, torsion balance, glarimeter, etc. Every effort has been made to concentrate on the testing apparatus and equipment available and to standardize test methods as much as possible. The flexibility of the conditioning apparatus in the physical testing laboratory was demonstrated during a series of tests under conditions of relative humidity varying from 15 to 85 per cent. Some difficulties are, however, still experienced in maintaining exactly 70 degrees temperature in the hot part of the summer, due to lack of insulation of the walls of the test room. The power supply has improved and there have been less delays due to that cause.

Tearing Strength of Paper

As indicated in the last annual report, two studies were continued during the year in regard to the tearing strength of paper. Two publications (Technologic Papers No. 194, and PAPER TRADE JOURNAL, March 9, 1922) have been issued, giving the results of these studies. It has not been possible as yet to recommend a standard method for determining this quality of paper, chiefly because of certain unknown factors introduced when more than one sheet is torn at one time. It is believed that the apparatus available at this time will give important information in connection with mill control work and that each of the types are of some such value. It is doubtful, however, whether any results are of an absolute nature and it is thought desirable to continue this study in the hope that a method may be developed which will give a true value to the tearing quality of paper. This quality is of very great importance in connection with wrapping and envelope paper and also in the case of paper for books, magazines, etc. However, the chief reason for continuing this research is to develop a method which compares with the common practice of tearing a corner of a sheet of paper to determine its quality and to have a check on the other test methods which do not give sufficient information. It is believed that a suitable test may be developed to give a true value of the tearing strength of a single sheet of paper.

Thickness of Paper

In co-operation with the Gage Section, an investigation of commercial dial micrometers for measuring the thickness of paper has been completed. This problem was taken up because of the differences existing at this time in the various types available and because of the fact that check results cannot be obtained in many cases, when using micrometers of different types. For this reason controversies have arisen and it was believed necessary to investigate the subject thoroughly, in order that definite data might be avail-

able. This study was made of twelve different micrometers, as to their mechanism and performance with fourteen different kinds of paper. Measurements were made of the area and parallelism of the contact surfaces and the static contact pressures of the instruments. It was found that there were radical differences in the various types of micrometers and that the thickness of paper as measured by these various instruments were in some cases quite different. These differences were most apparent where a bulky, loosely-formed sheet was used, due to the differences of the static pressure in the various types of micrometers. It has been possible to develop specifications for a standard instrument and for a procedure to determine the mean thickness of paper samples. Such an instrument should be of great value, because of the varying compressibility of different papers and the different pressures exerted by the various types of dial micrometers now used for determining the thickness of paper.

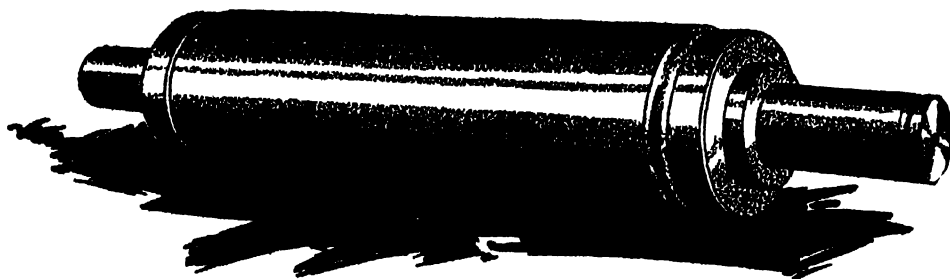
Blotting Quality of Paper

Considerable difficulty has been experienced in determining the blotting quality of paper by the Klemm strip method, which does not sufficiently take into account the thickness of the sample, nor the value of the sample in connection with repeated blottings. In the case of some papers, a high initial absorption will be obtained, but subsequent application of the sample to ink will often produce a blot, due to lack of further absorption. Twelve samples of commercial blotting papers were examined and tested by four different methods. These results were studied in connection with the bulk of the sample, the fiber content and the amount of ash present. It was found that, although the amount of bulk is an indication of the value of the sample, the fiber content and the amount of ash present are of great importance and should be considered. The best results were obtained with samples having less than 10 per cent of ash present and with a high percentage of cotton or rag fiber. The absorptive value of the paper is due to the air spaces between and within the fibers and, since the long rag fibers are cut up in the beater, there are a large number of ends to permit absorption within the fiber. The fibers of the broad leaf woods are bulky but are short and have not so many open ends, which probably accounts for their less absorptive quality. For determining the value of a blotting paper, a practical test was developed which will give relative results and also indicates which of several samples may be considered the best. It should be noted that the samples used in this investigation were those to be used for blotting writing inks and were not the type of paper used as desk covers, which are less absorptive, more compact and more durable.

Effect of Relative Humidity on Paper

Data appearing in various publications and developed by different laboratories, have indicated that it is necessary to control the atmospheric conditions in the testing laboratory in order to obtain accurate and reliable information as to the physical qualities of paper. This is due to the fact that changes of relative humidity markedly affect the moisture content of paper which in turn affects most of the physical characteristics of a sheet. In order to check work done at this Bureau ten years ago and to widen the scope of the information, a series of tests on eleven samples of different kinds of paper were made at relative humidities from 15 to 85 per cent. These tests included weight, bursting strength, moisture content, folding endurance, breaking strength, tearing strength, expansion, and stretch. An examination of these data indicate that the bursting and breaking strength increase with increase of relative humidity from 15 to 35 per cent and decrease as the relative humidity increases from 35 to 85 per cent. Weight and moisture content increases regularly with increase of relative humidity, as do the stretch of

(Continued on page 32)



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CORDAGE

F. A. CURTIS TELLS ABOUT PAPER LABORATORY

(Continued from page 30)

the paper under load and the expansion without load. Both the tearing and folding qualities of paper are markedly affected by changes of relative humidity, increasing in value with increase of relative humidity; however, this effect is not so regular with the different kinds of paper. It is shown by the data obtained that the tendencies indicated above are not the same for all kinds of paper and that it is probably impossible to develop a suitable conversion factor for the various tests. It is recommended, however, whenever possible, that some definite conditions of relative humidity be maintained within close limits in order that test data obtained on similar samples of paper may be comparable. A full report of the data obtained in this investigation will be published in the near future.

Paper for Cement Bags

In connection with specifications for paper for lime and cement bags, published in Technologic Papers No. 187, tests were made on ten samples of bags obtained from several shipments of cement to determine whether commercial bags conform to these specifications. Complete tests were made on these samples and it was found that only one bag would entirely conform to the specifications. Nine bags had a bursting strength equal to the specifications, five bags had the necessary ratio of bursting strength to weight, seven bags contained 50 per cent or more of manila and jute stock, eight bags passed the folding endurance specification, five bags had a breaking strength equal or greater than the specifications, but only two bags conformed to the breaking strength specifications. Data are being collected as to the value of the bags under service conditions of shipment and a study of these data will indicate whether the specifications as developed will be satisfactory for paper for this purpose.

Blue Print Paper

For several years paper manufacturers in this country have been developing a paper, for blue print purposes, which has seemed to give complete satisfaction. The requirements for this type of paper are somewhat severe for it must properly absorb the sensitizing solution, must resist rough handling when the blue print is in use and must have sufficient strength when wet to permit of handling in the washing bath. In order to determine the relative value of such paper made in this country and abroad, a number of samples were obtained and complete tests are being made. A comparison of the test data with specifications covering various uses of blue print paper will indicate whether commercial papers are equal to these specifications and whether foreign-made papers have any superior qualities over such paper made in this country.

Carbon Paper

As indicated in the last annual report, a study of carbon paper was being made in co-operation with the Chemistry Division. It has not been found possible to specify any but a practical test to indicate the value of carbon paper, but it has been possible to standardize the method of making this test in order to obtain relative values of carbon paper. For the purpose of Government specifications, carbon paper was divided into three classes or weights in connection with the number of copies to be made at one time on the typewriter. The kind and quality of paper to be used in making these tests have also been specified, as well as the kind of typewriter, type, etc. Data obtained in this manner on a large number of samples and correlation with actual use in the Government service should permit the development of definite specifications of carbon paper for use with the typewriter.

Sizing Quality of Paper

Over a year's study of the electrical conductivity methods of measuring the sizing quality of paper indicates that, although the

data curves obtained are consistent and regular, it is not possible to evaluate these curves in order to obtain a numerical value for this quality. The problem is of considerable importance, since there is little or no uniformity in determining this quality and the present methods used do not give results that indicate the true value of the sample. A reliable method is essential before an investigation of the sizing process can be undertaken. A new method has been developed and published in the *PAPER TRADE JOURNAL*, April 6, 1922, pp. 43-49, by F. T. Carson, which has the advantage of requiring very little equipment and of giving consistent results which may be given a numerical value. The test depends on the time of curl of a small sample of the paper, floating on water at a definite temperature. This time of curl is very consistent for a given sample of paper and by properly taking into consideration the thickness of the sample when completely saturated with water, a numerical value is obtained which indicates the degree of resistance to absorption of the sample. This method is being tried out by several paper mill laboratories and such data will aid in determining its actual value.

Herzberg Stain

In the microscopic examination of paper to determine the proportions of the various fibers of which it is composed, it has been customary to make use of a selective stain composed of zinc chloride, potassium iodide and iodine. The stain has the property of coloring cotton, chemical wood pulp and mechanical pulp differently which permits of greater ease in differentiating these fibers. Considerable difficulty has been experienced, however, in preparing this stain, so that the color differences are correct and it is the general practice to "doctor" the stain to get the proper colors with known fibers. A careful study of this problem has developed a formula and manipulation which produces the necessary color differences and has eliminated the necessity of modifying, from time to time, the proportions of the ingredients of the stain. Such a formula is of great value to the various paper testing laboratories which are equipped to make microscopic examinations and will assist in obtaining greater accuracy, due to greater uniformity of color.

Photomicrography

During the past two or three years, extensive data have been collected on methods of making photomicrographs of vegetable fibers used in the manufacture of paper. An increasing number of technical laboratory workers and others are availing themselves of the possibilities of this means of studying problems and it is believed that a publication on this subject would be timely. Various phases of this subject are considered in a report that is now in press which gives data and methods of manipulation as follows:—source of illumination, light filters, use of condensers, use of substage diaphragm, choice of camera and objective, photographic plates and their development, value of representative field of fibers, value of staining and photomicrographs as permanent records. The publication is replete with diagrams and photomicrographs which illustrate the various points to be brought out.

Color of Paper

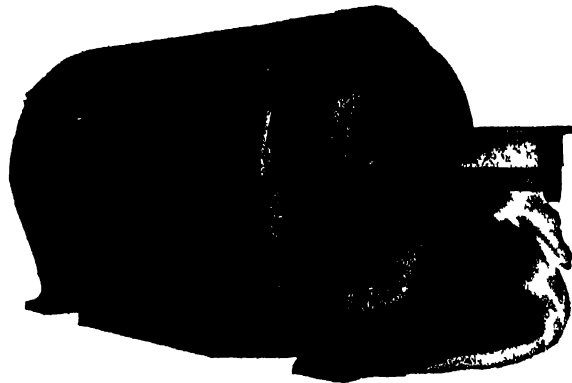
There has been a demand for a method which would satisfactorily measure and give a numerical value for the color of paper. Apparatus of this character is of importance in the study of such problems as the use of various clays as fillers in paper and also in connection with the color values and bleaching of the various pulps used in white printing and writing paper. Likewise a means of measuring the color of paper would be of great importance in assisting manufacturers to maintain uniformity of color, something of great importance in making fine papers. Through the coöperation and assistance of the Optics Division, an apparatus has been in-

(Continued on page 34)

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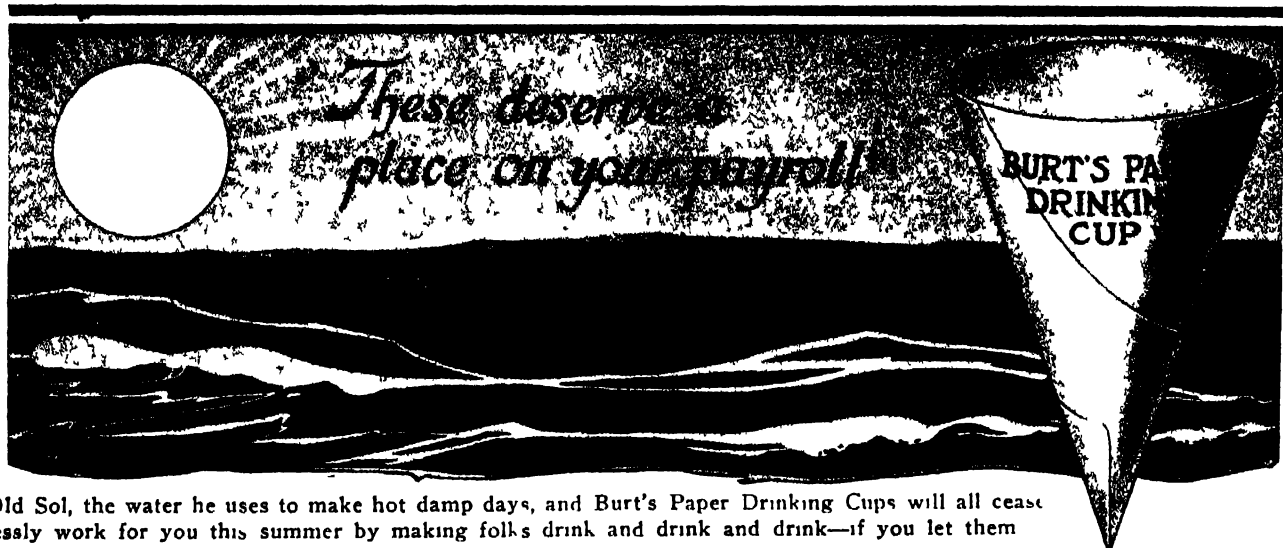
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F. A. CURTIS TELLS ABOUT PAPER LABORATORY

(Continued from page 32)

stalled, the chief portion of which is a spectrophotometer. Delays in securing the parts necessary for this apparatus have made it impossible to determine at this time whether such an equipment will be satisfactory for slight differences of tints of white paper, but with certain modifications, a suitable method for distinct color differences is being developed.

Flax Straw and Tow

Many attempts, both laboratory and commercial, have been made to utilize the million tons of seed flax straw which are produced annually in this country and of which 80 per cent are wasted. Most of the attempts have had in mind the production of a strong paper from the bast fiber, attached to the straw, by the elimination of the woody straw fiber which is short and of little strength. Mechanical separation of the woody straw fiber from the long bast fiber is necessary, as well as a solvent for the ligneous and pectous binding compounds which will not weaken the bast fibers. In most cases, alkaline solvents, such as milk of lime, caustic soda, etc., have been used but it has not been possible to eliminate all the woody shive by these processes. In the work carried on at the Bureau the "sulphate" process of cooking wood was used, both in the preliminary experimental work and the cooking trials under mill conditions. The process was found satisfactory for the separation of the bast fibers and paper was made, both from the flax straw and the flax tow, which had a strength equal to a good grade of wrapping paper and bond paper. Difficulty was experienced in eliminating extraneous dirt which had been introduced by careless handling of the tow and straw and because of unfavorable conditions during the cooking trials under mill conditions. No difficulty was experienced, however, in handling the stock on the paper machine at the Bureau of Standards where all the cooked fiber was converted into paper, both that produced in the experimental rotary and in the mill cooking trials. Complete data are not yet available as to the actual yield of paper from the straw and tow but about seven tons of whole flax straw are required for one ton of pulp for wrapping purposes. In general it may be said that a fair quality of wrapping paper can be made from whole seed flax straw, that a good quality of writing paper can be made from seed flax tow, provided especial care is taken to eliminate specks, that pulp prepared from seed flax tow can be readily bleached, that the chemical consumption for the preparation of pulp from the whole straw is about double that required for wood, that the chemical consumption for the pulping of a good quality of seed flax tow is only slightly in excess of that required for wood and that, at the present time, it is not economically feasible to use seed flax fiber for the making of paper unless a solvent can be developed which will not weaken the bast fiber, during the process of separation from the pectous and ligno-cellulose material combined with it. A full report of this investigation is in preparation and will be published in the near future.

Clay in Paper as Filler

In co-operation with the ceramic division, an investigation was undertaken as to the relative value of foreign and domestic clays when used as fillers in printing papers. This material is added to the fiber stock during the process of manufacture of paper to produce a smooth even surface, by filling up the interstices between the fibers, to permit of half-tone printing, etc. Foreign clays, chiefly from Cornwall, are used to a large extent for this purpose in this country and this investigation was undertaken to determine what qualities of the foreign clays produced the better results. In general, color, grit and retention on the paper machine are the factors to be considered. Complete physical tests have been finished by the ceramic division on a number of domestic and foreign clays and preliminary work on the paper machine is under way to standardize

the conditions of making the comparative runs. A considerable amount of preliminary work has been necessary to determine the closeness of check runs and a suitable method of determining the value for retention of filler. The problem has been made more difficult by the shortness of the runs and by the lack of uniformity among the paper mills as to a method of determining retention. This work will, however, be continued and as soon as definite data are available which may be used as the basis for tentative conclusions, co-operative tests are to be made with several book paper mills under commercial conditions.

Clay for Coating Wall Paper

The Bureau co-operated in a series of mill experiments in which four domestic clays were used successively in connection with the coating for wall paper. The problem under consideration was whether these domestic clays would be satisfactory when used with a special gum as adhesive. The tests indicated that all four clays worked satisfactorily and difficulties experienced in this connection are probably due to lack of care in heating the gum or in obtaining the proper proportions.

Standardization of Paper

During the past year, the question of the standardization of paper has been taken up with representative manufacturers and users. In view of the very large number of kinds of paper and uses for paper, certain general phases of the subject are being considered by several committees which are collecting information and data on which to base recommendations. Because of the necessity for obtaining a uniform classification of the kinds of paper for the purpose of properly tabulating statistics, a grouping of the various similar types of paper is being accomplished. Such a classification will be of great value to all agencies engaged in the collection of statistics of the paper industry and should make it possible to compare accurately data obtained through different sources. The use of terms and names of kinds and grades of paper is very indefinite in many cases. Definitions are being developed for about six hundred such terms and names, and this is being done with the assistance of manufacturers, users and technical men of the industry. The acceptance of such terms and their arrangement in the form of a glossary or dictionary will be of great assistance in eliminating certain misunderstandings between buyer and seller and will have considerable significance in connection with export trade. A large economy may be obtained by the reduction in the number of sizes and qualities of paper, both as to the large size sheets as sold and in the number of sizes of printed matter. An exhaustive survey is now well under way by a committee of large users of paper and a report and recommendations will be available in the near future. This phase of the subject is of great economic importance and will result in benefits to the manufacturer, distributor and user of paper. A technical committee is considering the following subjects: specifications of quality, standard methods of testing and sampling and tolerance to be permitted on deliveries. Because of the lack of such standardization these phases of the subject must first be considered in a general way and later particular kinds of paper can be considered in relation to their uses. This investigation will progress more rapidly after some of these general aspects of the problem have been settled.

Government Specifications

Assistance has been given various Government offices in connection with the development of proper specifications for the purchase of paper. In many cases, a large number of tests were necessary, but in this work an attempt has been made to bring more closely together the specifications as used in the various bureaus and offices.

(Continued on page 36)

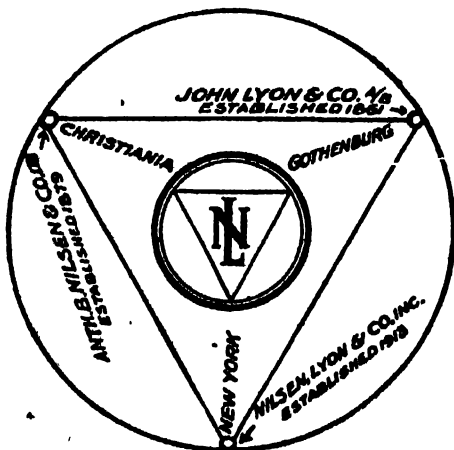
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F. A. CURTIS TELLS ABOUT PAPER LABORATORY

(Continued from page 34)

Changes have been recommended in the standards for the District of Columbia, with special reference to terminology and conformity to good practice. Recommendations have been made in connection with the specifications used by the Government Printing Office, although the necessary changes in them are minor in character at this time, with the exception of light weight printing paper used in the Bureaus' publications. It has, however, been suggested from time to time that the tolerances as to weight should conform somewhat more closely to good commercial practice. In connection with the General Supply Committee, some additional items have been placed under the "standard sample" group.

Lime for Sulphite Pulp

In connection with the Interdepartmental Conference on Chemical Lime, specifications were prepared for a suitable lime and limestone used in the preparation of the liquor used for cooking wood chips by the "sulphite" process. These specifications were based largely on data obtained during the war from a questionnaire and reflects the opinion of experienced technical men of the pulp industry.

Routine Testing

Although the chief functions in connection with paper are the development of standard test methods and specifications of quality, a considerable amount of time is devoted to the testing of paper to determine the quality of such paper when delivery is made on contract to the government. In addition to this, a certain limited amount of testing is done for the public, but this work is kept at a minimum, as there are several reputable commercial testing laboratories equipped for this type of work. All tests of this nature are made by the Bureau at 65 per cent relative humidity and 70 degrees temperature.

	Number of samples	Fee
Government Printing Office.....	1,331	
Post Office Department.....	777	
General Supply Committee.....	404	
New York State.....	149	
Department of Commerce.....	155	
Department of Interior.....	50	

Department of Agriculture.....	30	
War Department.....	23	
Panama Canal	21	
Treasury Department	14	
District of Columbia	12	
Library of Congress.....	4	
Navy Department	4	
Department of Labor.....	2	
Bureau of Standards	422	
For the Public.....	206	
For the Government.....	3,398	\$13,723.75
For the Public.....	206	794.50
Grand Total	3,604	14,518.25

Publications

The following publications, relating to the work of the Paper Section, have appeared during the year among the publications for the Bureau of Standards, and they may be obtained from the Superintendent of Documents:

- A preliminary study for tearing instruments and tearing test methods for paper testing. (P. L. Houston) Technologic Papers, No. 194.
 - A study of commercial dial micrometers for measuring the thickness of paper. (P. L. Houston & D. R. Miller) (in press).
 - The Photomicrography of paper fibers. (R. E. Lofton, in press.)
- The publications listed below have been published in outside journals by the members of the Bureau's staff indicated:
- The standardization of paper (F. A. Curtis), PAPER TRADE JOURNAL, October 27, 1921.
 - A supplementary study of commercial instruments for determining the tearing strength of paper (P. L. Houston), PAPER TRADE JOURNAL, March 9, 1922.
 - The testing of blotting paper (P. L. Houston & R. Ledig), PAPER TRADE JOURNAL, November 10, 1921.
 - The determination of sizing quality (F. T. Carson), PAPER TRADE JOURNAL, April 6, 1922.
 - Improvements in methods of making the Herzberg stain used in fiber analysis (M. F. Merritt), PAPER TRADE JOURNAL.



PHOTOGRAPH TAKEN AT THE FIFTH ANNUAL OUTING OF THE METROPOLITAN BAG AND PAPER

Paper Bag Jobbers Have Outing

Karatsonyi's Hotel, at Glenwood, L. I., was the scene of festivities last Thursday, when the Metropolitan Bag and Paper Jobbers' Association held its fifth annual outing. Three big sight-seeing cars, festooned with flags and streamers, carried the crowd, nearly a hundred strong, from Borough Hall, Brooklyn, while bells, horns and whistles of the revelers drowned out the din of the traffic.

The day was featured by a shore breakfast and dinner, as well as baseball, swimming and various athletic competitions, including the fat men's race, three-legged race, hopping race, 100-yard dash and the running broad jump. Prizes were awarded the victors.

The entertainment committee consisted of A. E. MacAdam, Jr., chairman; Charles Wollney, who captured the prize offered to the most fleet-footed heavyweight; G. W. Batz, president of the association; L. H. Heberlein and J. M. Berger, treasurer of the association. From beginning to end, there was no hitch to mar the day's fun and when supper came around every bag and paper merchant in the assemblage did justice to the palatable array of sea foods, from fried eels to lobster.

In the early afternoon there was a ball game, presumably between the bag men and the paper men. The score was approximately 37 to 2, but no one seemed to know who won, so there was no ill feeling whatever. Outside the hotel a keg of something or other provided refreshment for the crowd until it was espied by a group of ladies whose club was also holding its annual outing. After the sarsaparilla, or whatever it was, had disappeared from its container, the ladies themselves helped wind up the sporting program, participating in several running events that were spectacular in the highest sense. Running in file formation, the leader unfortunately tripped and fell, the other nine ladies piling on top of her. On the second attempt, one succeeded in crossing the finish line and was awarded the Paper and Bag prize for agility.

Dancing was the next activity that claimed the attention of the association members, and by the time the ladies' club had departed it was time for supper. When the crowd piled into the waiting buses for the trip back home it was generally agreed that "a good time was had by all." On the return trip tuneful melodies emanated from the rear seats of the busses and the departing Association members, as they left the party at various "L" and trolley intersections for a well-deserved night's rest, were sent away with "John Jones is a Good Old Soul" and "He's a Jolly Good Fellow" by the Bag and Paper chorus.

General News of the Wisconsin Trade

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., August 22, 1922.—Fox River valley paper mills are rapidly approaching the day when their coal supplies will be exhausted and shut-downs will be necessary, it has been learned. Two or three mills are quite well supplied, but there are others which are operating on a "hand to mouth" basis, with just enough coal in the yards to keep operating a day or two at the most. Two mills have burned large quantities of wood in the last few weeks. Small shipments of coal have been received, which has made it possible for the plants to keep operating.

Navigation on the Fox river, halted early in summer when the locks at Little Rapids were ruined by flood, will be resumed soon, but no coal is arriving at the docks in Green Bay and consequently opening of navigation at this time will be of little assistance to the millmen. Reports from other paper mill sections in the state indicate there is little danger of immediate closing down of plants and they are hopeful of being able to continue until the railroad strike is settled and coal starts moving again.

Engineers in charge of Fox river improvement here contend they do not know what the \$100,000 recently appropriated by Congress for work in the Fox river is to be used for. It is believed greater sluicing facilities will be provided, but engineers say they have received no definite instructions from the War Department. Congress also appropriated \$91,000 for dredging out the harbor in Green Bay so larger ships can dock there. This might result in larger coal shipments to the Green Bay docks.

The interstate commerce commission has ordered railroads to change their tariffs on printing, book and waxed wrapping paper, in carloads, from Kalamazoo, Mich., to a large number of cities in Illinois and Wisconsin so the rates are from one-half cent to six and one-half cents higher than rates contemporaneously maintained to the same cities from Neenah, Menasha, Appleton, Kimberly, Combined Locks, Kaukauna and Green Bay. The commission also ordered a rate from Kalamazoo to Joliet, Ill., 2 cents lower than the rate from the Wisconsin cities.

The new paper mill of the Westminster Paper Mills, Ltd., at New Westminster, B. C., Canada, will be completed in November, according to information from M. F. Herb, one of the officers, who is in Appleton disposing of stock in the concern. He will leave for the west in the near future. Mr. Herb spent part of last week at Beloit, inspecting tissue machines made by the Beloit Iron Works.



ASSOCIATION, HELD AT KARATSONYI'S HOTEL, GLENWOOD, L. I., THURSDAY, AUGUST 17

Editorial

Vol. LXXV New York, August 24, 1922 No. 8
FIFTY-FIRST YEAR

Paper Imports Continue Small

The figures just issued by the Department of Commerce at Washington, D. C., of the export of paper for the month of June, which are the most recent figures available, afford little encouragement that foreign trade in paper will show any considerable improvement in the near future.

The figures for June in fact show a small decrease as compared with May, the figures for the former month being only \$2,124,214 and for the latter \$2,167,536. The great decline that has been taking place in recent months in the quantity of paper sent abroad is even more noticeable when the figures for the year ending in June of this year and last are compared. For the current year the figures amounted only to \$20,668,535, while for last year they reached the total of \$56,551,518.

News print paper, however, was one of the few varieties of paper to show an increase, the figures for the month amounting to \$264,214 as compared with only \$225,456 for May and \$73,670 for June of last year. The figures for the twelve months' period ending with June were \$2,047,642 as compared with \$4,614,859 for the same period last year.

The exports of wrapping paper were valued at \$192,441 as compared with \$188,930 for May. The export of wrapping paper for the six months ending with June amounted to \$1,117,538.

The exports of writing paper for June were \$93,625 as compared with \$92,795 for May. For the six months ending with June they amounted to \$584,661.

The exports of toilet paper for June were \$51,116 as compared with \$66,456 for May. For the six months ending with June they amounted to \$268,036.

The exports of paper board and straw board for June were valued at \$203,451 as compared with \$208,879 for May. For the twelve months' period ending with June they amounted to \$1,681,721 as compared with \$4,891,917 for the same period last year.

The exports of paper bags for June were valued at \$86,487, as compared with \$80,283 for May and \$42,409 for June of last year. The exports of paper bags for the twelve months ending with June were valued at \$885,338, as compared with \$1,934,090 for the same period last year.

The imports of paper showed a slight increase for June, the figures being \$7,343,252, as compared with \$7,158,402 for May and \$6,168,911 for June of last year. The imports of paper for the 12 months ending with June amounted to \$85,121,313, as compared with \$98,757,656 for the same period last year.

The imports of news print for June were valued at \$5,889,695, as compared with \$5,649,320 for May and \$4,928,573 for June of last year. The imports of news print for the 12 months period ending with June were valued at \$71,382,737, as compared with \$81,842,012 for the same period last year.

The imports of rags for June were valued at \$230,595, as com-

pared with \$195,208 for May and \$63,692 for the same period last year. The imports of rags for the 12 months period ending with June were valued at \$2,939,055, as compared with \$5,558,488 for the same period last year.

The imports of all other varieties of paper stock were valued at \$359,621, as compared with \$284,912 for May and \$162,913 for the same period last year. The imports of other varieties of paper stock for the 12 months period ending with June were valued at \$3,121,612, as compared with \$5,182,984 for the same period last year.

The imports of mechanical wood pulp for June were valued at \$401,454, as compared with \$278,868 for May and \$221,786 for June of last year.

The imports of mechanical wood pulp in the 12 months ending with June amounted to \$5,484,945, as compared with \$12,146,697 for the same period last year.

The imports of unbleached sulphate pulp for June amounted to \$1,585,014, as compared with \$855,531 for May and \$1,017,361 for June of last year.

The imports of unbleached sulphate pulp for the 12 months period ending with June amounted to \$13,595,266, as compared with \$15,489,153 for the same period last year.

The imports of unbleached sulphite pulp for June were valued at \$1,239,408, as compared with \$979,747 for May and \$731,689 for June of last year.

The imports of unbleached sulphite for the 12 months ending with June amounted to \$17,373,416, as compared with \$30,393,567 for the same period last year.

The imports of bleached sulphate pulp for May were valued at \$72,986, as compared with no imports at all for May and \$41,463 for June of last year.

The imports of bleached sulphate pulp for the 12 months ending with June amounted to \$421,599, as compared with \$1,220,120 for the same period last year.

The imports of bleached sulphite pulp for June were valued at \$1,275,947, as compared with \$1,198,360 for May and \$1,498,245 for June of last year.

The imports of bleached sulphite for the twelve months ending with June amounted to \$13,154,322, as compared with \$16,941,676 for the same period last year.

The Broken Package Evil

The Paper Trade Association of Philadelphia is making commendable progress in solving the "broken package evil" which has been a thorn in the side of paper merchants throughout the country for years past and which has been increasingly disturbing under the abnormal conditions which have prevailed of late.

The Paper House of Pennsylvania in the coming issue of its bulletin will present the paper men's side of this evil to its patrons, and through the courtesy of the company the PAPER TRADE JOURNAL has been furnished with an advance proof of the matter. The article, which will appear under the caption of "Who Will Pay the Piper?" is as follows:

"The old question who is the retailer and who is the wholesaler in the paper business returns from a different direction. This time the paper merchant finds himself retailing paper on a whole-

seller's margin of profit. Beginning with the deflation in prices came an influx of small orders. The printer naturally bought paper as he needed it for work actually in hand. Nobody wanted stock on the shelves in a falling market. The inevitable result was that paper merchants selling to the general printing trade soon found themselves with an astonishingly large percentage of small orders. Less than five-dollar charges and broken-ream orders were too numerous for comfort, as every paper dealer realized that the expense and waste incurred in handling such small orders exceeded the profit on present margins. Careful analysis and distribution of costs show heavy losses on small orders, particularly on low-priced grades. In some cases losses on small orders wiped out all the profit on splendid selling lines.

"This condition cannot go on indefinitely, of course. The steadying of prices which will encourage printers to buy in large lots for their own stock to take advantage of the quantity discount may relieve the situation somewhat. Another good suggestion is that the broken package nuisance be stopped.

"Most buyers of printing would accept, for example, their printer's suggestion that an order for 10,000 forms $7\frac{1}{4} \times 8\frac{1}{2}$ be changed to either 9,000 or 12,000, as the stocks cut an even 3,000 per ream of folio. Furthermore, if the printer would say to his customer, 'I can give you 9,000, less spoilage,' or, 'I can get the paper house to open up another package, count out 150 sheets additional, wrap it up and send it without any extra charge other than the weight to allow for waste, so that I can deliver 9,000 net count,' we think we know enough of the ways of most buyers to say they would accept the first basis—ordered on quantity, less spoilage."

The committee on small order business of the Philadelphia Paper Trade Association, of which George W. Ward, of the D. L. Ward Company is chairman, has been giving this matter painstaking consideration for some time past, and its report, which is expected shortly, will be received with interest, not only by the paper merchants of Philadelphia but by those in some other paper centers as well where the "broken package evil" has already been endured altogether too long.

Protest Against Paper Freight Rates

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 23, 1922.—The Western Newspaper Union filed a complaint with the Interstate Commerce Commission against the Atchison, Topeka and Santa Fe Railway and numerous other carriers protesting that the rates charged by the defendants during the past three years for the transportation of news print paper, book printing paper, and similar grades, have been unjust and unreasonable. The Commission was requested to order carriers to award reparation and establish such rates for the future as the Commission may deem reasonable. The Western Paper Company, of Omaha, a subsidiary of the Western Newspaper Union; Midwestern Paper Company, of Kansas City, and West-Cullum Paper Company, of Dallas, are joint complainants with the Western Newspaper Union.

Strike to Retain 8-Hour Day

[FROM OUR REGULAR CORRESPONDENT]

MONROE, Mich., August 19, 1922.—Action by the Consolidated Paper Company to change from the eight-hour work day to the old two-shift system has resulted in closing certain divisions. The last men to walk out were the firemen and coal passers. The men are strongly opposed to the return to the 11 and 13 hour day.

Paper Making at New York Forestry College

The interest of the paper industry in the technical education of specialists in paper manufacture has been evident from the inception of the course at the New York State College of Forestry at Syracuse University, but it was never more forcibly demonstrated than this spring, when the mills were asked to co-operate with the college and provide places for the members of this year's class to enable them to obtain the six months' mill experience required by the course. The response was so generous that the seventeen men available for positions were quickly placed and several positions remained unfilled. Among the mills co-operating in this work are the Hammermill Paper Company, Erie, Pa.; American Writing Paper Company, Holyoke, Mass.; Foster Boxboard Company, Utica, N. Y.; Upson Wallboard Company, Lockport, N. Y.; Gould Paper Company, Lyons Falls, N. Y.; Minnesota and Ontario Paper Company, International Falls, Minn.; Newton Falls Paper Company, Newton Falls, N. Y., and The Oswego Falls Pulp and Paper Company, Fulton, N. Y. All of these mills placed the student workmen at wages which will enable them to defray their expenses and in many cases realize a substantial profit on the summer's work.

In addition to its regular program, the college offered during the month of March a short course for mill men which was attended not only by residents of New York State but by students from such distances as China. The short course was made a success by the active support of many prominent men in the industry, the following being a partial list of the supplementary instructors: John Rue, Forest Products Laboratories; A. F. Richter, Stebbins Engineering Company; Dr. Bjarne Johnsen, Hammermill Paper Company; James Cameron, Cameron Machine Company; Dr. R. H. McKee, Columbia University; W. H. Henderson, Westinghouse Electric Company; Edwin Sutermeister, S. D. Warren Paper Company, and Van Riper, E. I. du Pont de Nemours & Co.

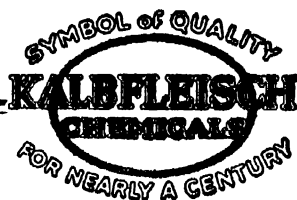
The development of the pulp and paper course has also been greatly facilitated by manufacturers in supplying the college with detailed information regarding their equipment and processes. Practically all of the material used in the laboratories has been supplied to the college gratis by mills and supply houses, exceptionally large gifts of pulp having been made during the past year by the Hinckley Fiber Company, The West Virginia Pulp and Paper Company, The International Paper Company and The Oswego Falls Pulp and Paper Company. The Solvay Process Company has supplied the laboratories with a complete line of its various alkalis and the E. I. du Pont de Nemours & Co. was the donor of a valuable gift in the form of two-ounce samples of about fifty dyestuffs which are extensively used in the coloring of paper. The interest of the du Pont company in the development of the course has been noteworthy, the latest instance of its co-operation being an arrangement whereby Professor Libby, of the college faculty, has been enabled to spend the summer vacation in the dyestuff laboratories of this company at Wilmington, Del. The information obtained there will be included in laboratory course on the coloring of paper and presented at the college for the first time next year.

Knowlton Bros. Improvements

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., August 21, 1922. Knowlton Brothers, Inc., have just placed on the market for sale two buildings which are now a part of the present plant. One of them has been owned by the company for 40 years and the other for 25 years. Both are across Mill street from the main plant. A brick structure, 42 by 98 feet and three stories high, formerly used as a finishing and storing building, but now rented, and the office building of two stories and 50 by 58 feet, are to go.

The finishing department has already been moved into the new structure purchased of the Harmon Machine Company and remodeled, and the offices will go across the road into the new office now ready for occupancy.

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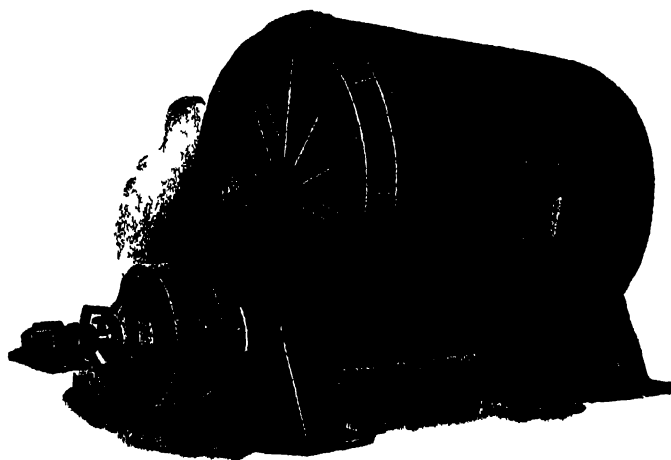
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TRENTON, N. J.

Section of the **Technical Association of the Pulp and Paper Industry**



AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by W.G. Mac NAUGHTON, Secretary

VOCATIONAL EDUCATION IN PULP AND PAPER MANUFACTURING

The following has been prepared by the Vocational Education Committee of the Technical Association for the purpose of suggesting methods of carrying on vocational education in pulp and paper mills in the United States.

Each mill and each community has its own peculiar problem which must be worked out according to the existing conditions.

Avenues of Instruction

Broadly speaking, there are three ways for the men in the mills to obtain the necessary instruction to accompany the text books which have been prepared.

- (1) Correspondence schools
- (2) Classes in local public schools, either day or night.
- (3) Classes in the mills.

We shall deal with each of these later.

There are in all about six types of men (each with a different viewpoint) who will be able to take advantage of the text matter. These types should be taken into consideration when forming classes. They are:

- (a) Technically trained men who desire a broad practical knowledge of pulp and paper manufacture.
- (b) Foremen.
- (c) Skilled operators who desire promotion to better positions.
- (d) Skilled operators who desire special training pertaining to their own jobs.
- (e) Unskilled operators who desire to acquire skill.
- (f) Boys who have entered the industry as learners, and who desire to attend part-time classes offered through the public schools.

In pointing out the means best adapted to reach these different types for carrying on this work we shall first touch briefly on those we have in the United States.

The State Boards for Vocational Education co-operating with the Federal Board are very much interested in vocational education in pulp and paper mills, as well as in all other industries, and are ready to give all the assistance they can to this industry.

The Federal Board has already made a very careful and exhaustive job analysis of the pulp and paper industry embodied in a booklet which may be obtained, free of charge, by application to the Secretary of the Committee on Vocational Education, R. S. Kellogg, 342 Madison avenue., New York City. A study of this booklet should be made by all who contemplate carrying on vocational education in their mills.

The State Boards for Vocational Education in those states where pulp and paper mills are located are actively interested in

promoting foreman training conferences and are prepared to co-operate with the industry in putting on foreman training conferences. State Boards for Vocational Education in many states may assist in supplying teachers and are ready to give financial aid to local boards of education in conducting classes in vocational subjects. Write to the Director of your State Board for further information. A list of the State Directors is given at the end of these suggestions.

Some of the State Universities are preparing to offer extension courses with the text books as a basis. At this writing the University of Wisconsin has already outlined an extension course available not only to residents of Wisconsin, but also to every point reached by mail, at a very small fee.

Local schools, particularly those in paper mill districts, through their vocational departments, will be found ready to co-operate with the mills. Teachers can be supplied, schoolroom facilities offered and other assistance given. In a number of centers arrangements have been made through a co-operative agreement with the public schools and the local mills in which the boys work in the plant for half a day and attend school for the balance of the time. Or, in some instances, a two-boy-plan has been arranged, whereby one boy works in the plant for one or two weeks while his co-worker attends school. This half day plan, or the alternate two-boy-plan not only gives the boys a chance to gain a practical knowledge of the pulp and paper industry, but also provides for the completion of their high school courses. Under the heading "Methods of Organizing Classes" will be found described in detail how a course of this kind can be worked out.

In Canada there has been formed the Canadian Correspondence College, with headquarters at Gardenvale, Quebec. The School of Pulp and Papermaking is working in co-operation with the Canadian Pulp and Paper Association. The instructors who will aid in this work are men prominent in the pulp and paper industry of both Canada and the United States.

Methods of Organizing Classes

There will probably be a few men in each mill with enough ambition and fixed purpose to carry a correspondence course through to completion, but as a general rule, class instruction will reach by far the greater number.

For classes organized in the mills, teachers must be supplied and where the teachers will be drawn from will depend largely on local conditions. Frequently a mill will have in its own organization those who have had sufficient teaching experience to carry

on the work. Teaching experience is essential and the advice of local school boards and educational authorities should be given due weight in this important matter. In the organization of classes it should be borne in mind that the text books are put out in two forms, first, five bound volumes available for reference and for the general course; second, the volume split into pamphlets which can be grouped for unit courses, such as, beating, paper machine operation, mechanical pulp making, sulphite pulp making, etc.

How the Movement Should be Supported

The success or failure of vocational education will, of course, rest largely with the mill management and executive forces. To carry on this work the owners and managers must display an active interest. The superintendent must be in sympathy with better education for his men and the foremen must realize that better trained operators will show better results in each department.

The interest of the foremen can be stimulated in no better way than through the Foreman Training Conferences put on by the State Boards with the co-operation of the Federal Board. These conferences do not aim to teach the foreman the practical details of his job. It is assumed that he knows these already. They do teach the foreman the extent of his responsibilities and show him how to use intelligent analysis of the jobs over which he has supervision.

Methods of Financing

The question has arisen many times as to how these courses should be financed, how the books should be paid for, what part the men receiving the training should pay and what part the mill receiving the results of the training should pay. Here, again, local conditions and local policy will largely govern the method.

We do not believe that, as a general policy, it is wise to offer these courses absolutely free. Humanity usually values both material and mental goods by the price it has to pay and something for nothing, to the average man, is worth just that. Mills which have gone into this have chosen various methods. In some cases, the men pay for the books and other expenses and, upon successful completion of the course, the money is refunded by the mill. In some cases, the mill assumes part of the expense and the men part. In some cases, the mill has assumed all expense, but experience shows that those courses are most successful in which the men have a financial interest.

In conclusion, we wish to say that the committee is ready at all times to advise with any mill on any phase of the subject and will be glad at any time, upon request, to put mills in touch with authorities, give the experience of others, or aid in any way within its power to carry on the work.

State Directors for Vocational Education

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General News of the Boston Trade

[FROM OUR REGULAR CORRESPONDENT]

Boston, Mass., August 21, 1922—Paper merchants report that business for the past week or two has been spotty, as has been the case for the past few months. Practically every paper merchant in this city feels that better times are not far distant. Today a peculiar situation is found here in both the paper business and in the paper box and boxboard business. Practically every mill has withdrawn its prices and will not quote except on each separate order as it comes in. Boston merchants feel that such a condition points to a rise in prices, but they do not feel that this rise will be more than 5 to 10 per cent over existing prices of today. The sales for the past two months in the various Boston houses have been fair and as good as could be expected with many of the men on their vacations, which means that those on hand have had to work harder and longer to turn in the orders necessary to keep up the volume. Better business in the fall is the slogan of the Boston merchants, but they state that they do not look for any runaway.

Stone & Andrews, on Devonshire street, report that the orders have been coming in better during the past week and that August has shown a decided improvement. They state that business is a bit dull, but that buyers are ordering because of the fear of an advance of prices.

H. H. Rutter, of the Stone & Andrews concern, is now in Maine, making his regular trip, while Walter Temple has just returned from his regular trip through Northern New England, which included New Hampshire and Vermont.

Arthur E. Ham & Sons, of 10 High street, will show all kinds of paper at the Graphic Arts Exhibition, especially featuring their Rox-burge Laid, in book and cover sizes and weights. This paper has strong laid lines in colors of soft cream white, subdued rich tones of gray, buff, olive and rose, and with deckle edge on two sides makes a beautiful effective paper. Another feature of this exhibit will be the showing of revised colors of the Potomac Covers. The company has done much to further the exposition in giving the free use of its advertising space and paper and in the personal work of Mr. Ham.

IMPROVEMENTS IN METHODS OF MAKING THE HERZBERG STAIN USED IN FIBER ANALYSIS*

By MURIEL F. MERRITT, LABORATORY ASSISTANT PAPER SECTION, BUREAU OF STANDARDS

As difficulties and delays have been encountered in fiber analysis because of non-uniformity of the Herzberg stain employed, the present investigation was undertaken for the purpose of developing a procedure which would always give a reliable stain. This stain is essentially a mixture of a saturated solution of zinc chloride with an aqueous solution of potassium iodide and iodine. It is used in connection with the differentiation between rag, chemical wood, ground wood, and jute fibers. A correct stain should give the following colors: rag, cotton, linen, and hemp, wine red or brownish pink; chemical wood, bleached straw, and jute, colored dark blue; mechanical wood fibers, unbleached jute and straw generally a lemon yellow; esparto bluish or reddish; manila almost any shade from blue to yellow; adansonia the same color reaction as chemical wood. (**27). The differentiation of various fibers as found in paper depends on the characteristic markings of the fibers as well as color differences which are an aid but not sufficient in themselves.

According to an early account, a stain similar to the Herzberg stain has been used for many years as a botanical stain (4). In this connection it was known as Schultze's test. This type of stain was, however, developed by Herzberg for use in connection with the examination of fibers as found in paper.

Among experimenters whose works have been reviewed in the preparation of this paper, there is much variation as to the procedure used in the preparation of the stain, and hence they seem to have had trouble in obtaining uniform results. All seem to agree as to the proportions necessary but in the methods of obtaining them, they differ.

All blame for poor color cannot be placed upon the stain; variations in color may not be due to a number of causes. One author (24) gives the following as a list of conditions under which color variations are likely to occur:

1. The use of reagents of unknown strength is to be avoided. It is advisable always to work with a solution of standard composition, so that the results may be readily compared.

2. The condition of the pulp will, of course, modify the intensity of color; if the small quantity of fiber put on the glass slip is very moist it will not take so dense a color as a similar portion squeezed out fairly dry by means of blotting paper.

3. The physical condition of the fibers under investigation is an important factor in the color reaction. The appearance, for example, of cotton fibers will vary according to the treatment it has sustained.

4. The purity of the cellulose itself, has also a marked influence upon the color reactions. The truth of this statement can easily be verified by examination of specimens of imperfectly boiled wood pulp, and samples prepared from over boiled wood. The structural details are much more marked in the former case.

5. The length of time during which the fibers are exposed to the influence of the reagent, also causes the variation in color. Iodine especially, is a fugitive reagent, and fibers showing a dense color at first will gradually lose the color and eventually appear almost colorless.

It seemed advisable in view of the progress made by the paper industry during the past few years, to obtain the present experience of some of the leading manufacturers, so the following questionnaire was sent to those using the stain.

1. What formula do you find most satisfactory for the stain known as the Herzberg stain?

Formulas varied, majority used Herzberg's original formula.

*Published by permission of the Director of the Bureau of Standards, Washington, D. C.
These numbers refer to the Bibliography appended to this paper.

2. From what companies do you purchase the chemicals used, and what is the purity of the zinc chloride, iodide of potassium, and iodine?

Five companies mentioned as sources of supplies. Very few analyzed the chemicals used.

3. Is the stain made in large or small quantities?

Made in small quantities

4. Is the zinc chloride used as it comes from the manufacturer or is it dried?

Used as received, never dried, majority used fused stick.

5. What is the specific gravity of the zinc chloride solution before adding the potassium iodide and iodine?

Many did not know the specific gravity, one used a saturated solution at 20°C, another used a solution of specific gravity 1.8, while another used a 1.5 solution.

6. Is the zinc chloride solution acid, neutral or basic?

Five answered slightly acid, another said their zinc chloride was neutral.

7. How are the two solutions mixed?

All simply mixed and let settle. One suggested pouring the final solution in a tall cylinder to settle.

8. In what type of containers is the stain kept?

Dark bottles are used by all.

9. How long will the Herzberg stain keep and still give good color reactions?

From two weeks to two years.

The detailed procedure as adopted in the laboratory was as follows except where variations were introduced for the purpose of trying out some special cases. Chemicals were obtained from several sources; fused sticks of dry zinc chloride were purchased in small, well sealed bottles containing approximately 50 g. As a basic formula the proportions given by Herzberg were taken.

Solution A—50 g. of zinc chloride in 25 cc. of distilled water.

Solution B—5.25 g. of potassium iodide and .25 g. of iodine in 125 cc. of distilled water.

After decanting add a small leaf of crystal iodine.

Many stains were made and tried according to the formula given above, and a number were varied slightly one way or another. Any marked variation from the above proportions always gave poor results. The zinc chloride was used as it came from manufacturers and exposed as little as possible to the air on account of its hygroscopic properties. To each 50 g. bottle was added 25 cc. of distilled water by means of a graduated pipette. The glass stopper was then replaced and the zinc chloride allowed to dissolve. When the solution had cooled sufficiently, it was poured into a tall graduate and the specific gravity taken at 28°C and recorded. Water was added by means of a 1 cc. pipette until the desired specific gravity 1.8 was obtained.

The zinc chloride was tested for specific gravity at a certain temperature to insure uniformity.

Part of the 125 cc. of distilled water intended to dissolve the potassium iodide and iodine was used to rinse off the thermometer and hydrometer and original zinc chloride container. This was then mixed in the zinc chloride solution and stirred with a glass rod. When the solution had cooled to 28°C again, the solution of 5.25 g. of potassium iodide and .25 g. iodine were added. The temperature of the solution was taken after the two solutions were well mixed. This was usually about 37°C. Then the solution was poured into a tall cylinder and stoppered and placed in the dark to settle to avoid fading of the iodine. The iodine and potassium iodide should be weighed dry and covered to prevent the absorption of moisture.

The following day the clear solution was pipetted off. Occasion-

ally there was a ring of sediment at the tip. In this case it was broken up and allowed to settle to the bottom before pipetting. About 3 or 4 cc. of the solution was left above the sediment to avoid any possibility of drawing off the sedimentary deposit. The temperature and specific gravity were taken again. In most cases the specific gravity was 1.70 at the temperature of 24° to 25° C. The stain was pipetted into a black bottle, and generally a leaf of crystal iodine added as in the original Herzberg procedure.

From the manufacturer's analysis the principal impurities of the zinc chloride were iron, lead and sulphuric anhydride. The addition of minute quantities of these impurities to otherwise satisfactory stains produce marked variations in the color effects. These few tests were deemed sufficient to prove that the presence of these impurities was objectionable. If water were added in any amount above that called for in the formula the stain was so weakened as to be unreliable.

Although the difficulty was not encountered in the present work (all the zinc chloride used was acid to methyl orange) it is well to know that should basic solution be found they may be acidified with hydrochloric acid and the acid then removed by prolonged heating over a steam bath. (6). Precaution should be taken that specific gravity of 1.8 be maintained after heating.

In order to test the solutions after they were made, microscopic slides were prepared. The samples chosen for the tests were selected from routine work and the results averaged. Slides of 100 per cent rag, 100 per cent chemical wood, 50 per cent rag plus 50 per cent chemical wood, and 50-50 mixture of coniferous wood and ground wood served for this purpose. The samples were tested primarily for color reaction by daylight and artificial light. Tests were made daily on some stains, weekly on others, until the supply was exhausted or no further fitted for use.

The following tables give the treatment and results of a number of stains. The missing numbers represent stains made with formulas, from which no satisfactory result could be obtained. Chemicals marked X were secured direct from the manufacturer and those marked Y were taken from Bureau stock and included both powder and stick zinc chloride.

The following formula and procedure are, therefore, adopted as standard:

Solution A—50 g. of dry zinc chloride (fused sticks), 25 cc. distilled water added with a 25 cc. pipette in the zinc chloride bottle, stoppered and shaken. Should be about 40 cc. of solution.

Take the specific gravity at 28° C. If the specific gravity is not 1.8 add distilled water in 1 cc. pipette until the specific gravity is 1.8, then pour into a tall cylinder.

Solution B—Take part of 12.5 cc. of the distilled water to rinse the thermometer, the hydrometer and original zinc chloride container and add to solution A. Dissolve 5.25 g. of potassium iodide and .25 g. of iodine in the balance of the water. Add B to A, stir well and place in the dark. The following day pipette off the clear portion into a black bottle, leaving 3 or 4 cc. of the solution above the sediment. Add a leaf of crystal iodine.

This stain will be found to be satisfactory for at least two weeks if it is to be used for routine analysis where color differentiations are important. Weights and measures must be observed carefully as Herzberg advised in his directions.

Table I.—Specific gravities and temperatures

Number of stain	Temperature, centigrade	Specific gravity	Additions (water) cubic centimeters	Final specific gravity	A and B before settling		A and B after settling		Additions (Iodine)
					Temperature, centigrade	Final specific gravity	Temperature, centigrade	Specific gravity	
The "X" Stains									
1	28°	1.88	5	1.8	38°	..	25°	1.75	Leaf of Iodine
5	40°	1.88	..	1.8	32°	1.71	25°	1.70	..
6	28°	1.85	..	1.8	32°	1.71	25°	1.70	Leaf of Iodine
7	28°	1.88	..	1.8	39°	1.68	25°	1.70	Leaf of Iodine
8	28°	1.85	..	1.8	39°	1.70	25°	1.70	Leaf of Iodine
10	28°	1.85	..	1.8	35°	1.70	25°	1.70	Leaf of Iodine
11	28°	1.85	..	1.8	35°	1.70	25°	1.70	Leaf of Iodine

Number of stain	Temperature, centigrade	Specific gravity	Additions (water) cubic centimeters	Final specific gravity	A and B before settling		A and B after settling		(Iodine) Additions
					Temperature, centigrade	Final specific gravity	Temperature, centigrade	Specific gravity	
12	28°	1.89	3	1.8	34°	1.76	25°	1.75	Leaf of Iodine
13	28°	1.87	3	1.8	39°	1.66	24°	1.70	Leaf of Iodine
14	28°	1.88	4	1.8	39°	1.70	22°	1.71	1 cc.
15	28°	1.85	2	1.8	36°	1.70	24°	1.70	..
16	28°	1.87	3	1.8	36°	1.70	24°	1.70	..
17	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
18	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
19	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
20	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
21	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
22	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
23	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
24	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
25	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
26	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
27	28°	1.87	4	1.8	36°	1.70	24°	1.71	Leaf of Iodine
The "Y" Stains from Bureau Stock									
28	28°	1.86	3	1.8	42°	1.70	35°	1.70	Leaf of Iodine
29	28°	1.86	3	1.8	43°	1.70	35°	1.70	Leaf of Iodine
30	28°	1.85	2	1.8	36°	1.72	24°	1.70	Leaf of Iodine
31	28°	1.85	2	1.8	36°	1.70	24°	1.70	Leaf of Iodine
32	28°	1.85	2	1.8	35°	1.70	26°	1.70	..
33	28°	1.85	2	1.8	36°	1.71	24°	1.67	Leaf of Iodine
34	28°	1.85	2	1.8	37°	1.71	22°	1.73	Leaf of Iodine

Table II.—Results Obtained

The X Stains

Stain number	Length of time stain could be used satisfactorily in weeks	Remarks
1	1	Too blue fourth day
5	2	Fair for ground wood
6	2	..
7	6	..
10	2	After the blue predominated
11	2	..
12	2	..
13	..	Blue predominated due to 52 g. zinc chloride in solution
20	2	..
21	2	..
24	..	Blue predominated due to 52 g. zinc chloride in solution
25	2	..
26	2	..
27	2	..
28	2	..
29	2	..

The Y Stains

9	2
15	2
16	2
17	2

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SURFACE TREATED PAPERS*

Surface treated papers are many in number and kinds. To this class of papers there belong all the chromo papers, papers whose surfaces have been specially treated for art and half-tone printing marbled papers, papers with glacé surfaces, photographic papers and various other special papers used for different technical purposes. In the strict sense of the term papers, made with particles of gold, silver and other metals, gummed papers and wall paper in general do not belong to this classification, although the surfaces of these papers are subjected to a partial treatment, which is very similar to what surface-treated papers are subjected to. However, in the paper trade the term "surface-treated" paper is applied only to chromo-papers and papers whose surfaces have been subjected to special treatment for art printing and also to the highly finished paper that is used in printing illustrations in books and magazines. This latter sort of paper does not have a specially treated surface, but the effects are gained by a careful composition of paper stuffs, the grinding that they undergo and the treatment that the paper receives on the paper-making machine, so that the surface possesses the proper properties for printing illustrations and making of auto-types.

Photographic Paper and Photographic Tracing Paper

These papers undergo special treatment of the surface. The paper is subjected to a coating process, but the peculiar properties of the papers are due far more to the compositions of the paper stuff and to the processing carried out on the paper-making machine, and so they will not be classed in the above category. The manufacture of these papers is not very extensive and the details thereof are concerned with certain special technical empiric knowledge that makes it unadvisable to go into a discussion of the same at this point.

Chromo Papers

The most important of the surface-treated papers or coated papers are the so-called chromo papers and the art printing papers. The surface properties of such papers are improved to such a degree by forming an unbroken layer of certain powdered minerals, which are fixed to the raw paper by suitable adhesive preparations, that the finished products become particularly well-suited for certain special printing purposes.

The chromo-papers are mostly papers of inferior quality, containing a considerable proportion of mechanical wood pulp. These papers are made in increasing thickness up to the thickness of cardboard. The rather thick coating of mineral powder, which is applied to one side of the paper, can be carried out either in special factories or else in the plant where the paper itself is made. The surface finish of the paper should be very high. The high gloss that the paper possesses is always decreased to a certain extent in the printing process, due to the absorption of moisture. As these chromo-papers are used particularly in multi-color printing and also in regular color printing, they must not stretch. If this happens then one color will not be printed in the proper position with relation to the ones printed previously, and a poor picture will ensue. The rather thick top layer, which is applied to these papers, must not tend to shear off, it must not crack or tear, and during the printing process it must not crumple up. Likewise, it must not remain sticking to the electroplate. The thickness of this surface layer in chromo-papers presents the danger that, when the paper is bent, the layer might crack and so give rise to many fine fissures in the same. Because of the high mechanical wood pulp content, the paper is for the most part rather brittle and liable to crack easily. The color of the paper is not a pure white in the majority of cases, but a yellowish white.

Art Printing Paper

On the other hand, the art printing papers are coated on both sides and are frequently made in rather thin sheets, as their most important use is in the manufacture of books. For this reason, not only the raw paper, but the coatings that are applied to it as well, must possess quite a high degree of flexibility and suppleness. Furthermore, the coatings need not be so thick by any means as in the chromo-papers; on the contrary, they are so thin that they can scarcely be noticed in the section of the finished paper. For the same reason, the composition of the paper stock must be of higher grade materials and the paper must be made with greater care. Very often, raw papers which are free from wood pulp, are used for this purpose; they can be colored fine delicate shades in the stuff. The finishing of the paper is effected in various ways, and glaze can vary from a matte to a very high gloss.

Stained Papers

These papers may be included in this classification by extending the applicability of the term, coated papers. Stained papers are coated on one side and then finished off to a high gloss. The coating is colored in most cases, a process which requires raw paper of special properties. These properties are not indicated at all or only in a very slight degree in the case of chromo-papers. Better grades of paper stock must be used in the manufacture of stained papers. The color must lie on the surface of the paper only, and must not penetrate through it. Consequently, the papers must be well sized. Size must also be used to some degree in the manufacture of chromo and art printing papers. As these stained papers are used mostly for covering cardboard and pasteboard, the size should not, on the other hand, penetrate through to the underside of the paper, and likewise it must have no bad effect either on the finish or the color of the paper. As the paper is bent, creased and folded in the course of the subsequent processes, the surface layer must be thin; otherwise, it will tear, split or shear off entirely. Thin papers are used for this purpose, which may contain quite an amount of wood pulp. In this case, however, only the very best grades of mechanical wood pulp must be used, as any splinters, bundles of fibers which have not been opened up properly, knots, etc., exert a very bad influence on the color coating, injure the glaze on the paper and give rise to the formation of spots, due to the fact that the paper is not sized properly at these points and the color accordingly breaks through.

Metallic Coated Papers

These papers must also be made from material which possesses certain special properties. The original paper, from which the metallic coated product is manufactured, is mostly thin and contains a high percentage of wood pulp. In the case of gilt papers (golden yellow) brown wood pulp paper is used to good advantage, as it possesses a high degree of flexibility and toughness, particularly in thin sheets. Furthermore, this sort of paper is absolutely free from acidity, which is an important factor in the manufacture of gilt papers. In the case of white papers as well, it is very important to see that they are free from acidity, chlorine and other metals which might attack the powdered metallic coating. It must be remembered that these metallic-coated papers are made from base metals, which all have a tendency to oxidize in the air with resulting change in color, when acids and other corrosive agents are present in the underlying paper, then this tendency is considerably increased.

Velour Papers

The manufacture of velour papers is much similar to that of metallic-coated paper. Instead of a coating of metallic powder on the surface of the paper, a fine, wool dust, which is colored by a special process, is distributed over the surface, which is coated

*Translated from *Der Papier-Fabrikant*, 1922, pages 479-483. By Ismar Ginsberg, B. Sc., Chem. Eng.

with a suitable adhesive so that the textile material is fastened tightly to the paper. An essential point in the manufacture of these papers, as well as in that of the metallic-coated papers is that the size, used in the manufacturing process, must not penetrate through the paper. Tearing or splitting of the surface of such papers is scarcely to be feared.

Treatment in Coated Paper Manufacture

Coated papers must be made from paper stuff, which is mixed and treated in a special manner, so that the product can stand up against the peculiar conditions which it is subjected to. This is true particularly in the case of cheap papers, which must be made with a considerable proportion of wood pulp, but which, nevertheless, must have the proper degree of transparency, a surface which is not porous, a slight amount of stretch and a high degree of imperviousness. Under these conditions the greatest care must be taken in making the proper choice of wood pulp. If the plant is in the position to make its own wood pulp, then this factor in the manufacture can be controlled without much difficulty, but if the wood pulp is bought on the market, there is always the danger of irregularity in the quality. The purchase of the proper kind of wood pulp is, therefore, a very important factor in determining the success of the manufacturing process of making coated papers.

Quality of Wood Pulp for Coated Paper

Wood pulp, which is as free from ash as possible, which is made from logs which are not too old, but which are freshly cut and almost entirely clean and free from all bark, should be used in the manufacture of coated papers. All knots, which are found in the logs, must be bored out very carefully even at the cost of loss of wood, as it is just the splinters from such knots that are the cause of ugly spots on the paper, especially when the paper is made thin.

Grinding of the Wood Pulp

Only artificial stones are used in grinding the wood pulp. These are the only means of producing such an absolutely homogeneous stuff that is required for the manufacture of coated papers. There must be no splinters of any kind in the ground product, otherwise the color and the size will penetrate through the texture of the paper, particularly in the case of the thin papers used for art printing. This condition would cause spots, which would render the paper totally unfit for use. To remove these splinters, very careful screening must be carried out with fine screens, the openings in which must not exceed one millimeter. The Biffar mill is advantageously used in this process, as it combines the operation of screening and refining in one apparatus. The mill operates continuously, it first screens out the coarse particles and then refines them until they can pass through the sieves. A wood pulp that is prepared in this manner can, as may be expected, be used in still larger proportions in the manufacture of coated papers without any danger of spoiling the quality of the same.

Treatment of the Cellulose

The cellulose, intended for the manufacture of coated papers, is always treated in a kollergang, as in this case as well there must not be present any bundles of fibers. According to the color and the grain of the product, semi-bleached cellulose can be used for this purpose in various proportions, soda cellulose can also be used for this purpose. Whenever considerable strength is required in the coated paper, a large proportion of soda cellulose is used. These coated papers are used to a considerable extent in the printing of stamps, such as are used for revenue purposes on cigar boxes, etc. In this case the paper must meet rather severe conditions, as the paper stuff must be absolutely pure, free from all spots; it must print well with all sorts of colors. The coating is mostly white and comparatively thick, in any case thicker than the coating on art printing paper, but not so thick as in the chromo papers. Furthermore, just as in the latter case, the coating is applied to one side of the paper only. Such raw papers, which

are indicated for the manufacture of stamp and multi-color printing papers, are by no means so easy to make, as the required properties oppose each other to a certain degree. For example, while coated papers, which are used in multi-color printing, must possess as little stretch as possible, so that in the printing process the colors will be printed in the proper places in the design so that a whole picture is obtained with parts that do not overlap; the stamp papers are, however, required to stretch to a slight degree, so that they do not split or tear in the stamping process. These two opposing properties can, however, be obtained simultaneously in the finished product, if a strong tough paper stuff is used and worked in the proper manner to produce the desired results.

Use of Old Paper

The use of old paper, which must be used for this purpose with great care, may also be recommended to a certain extent, as it gives the paper stuff properties which are very desirable in coated or marbled papers. In the first the old paper must be carefully sorted; all dirty, oily and fatty pieces must be separated out. The treatment of the paper must be carried out in a kollergang, and in certain cases in the pulping machine as well. In the case of hard-sized papers, particular attention must be paid to the removal of all knots in the material produced by the edge runner. Whatever little filling materials are used, must be of the best quality, the highest purity and must be put through the finest washing and levigation. The best method of using these fillers is to first work them up into a thin milk in a special container and then to strain the same into the hollander through a very fine sieve. Exactly the same care must be exercised in carrying out the coloring of the paper stock, whether the color is for the purpose of just producing a slight tint in the paper or when the color is employed to make a distinctly dyed coated paper. In all cases the coloring matters must be easily dissolved—mineral colors are not usable for this purpose. The solution of color, very much diluted, is fed into the hollander through a fine sieve.

The Treatment in the Hollander

The hollander must be built strongly and have a good circulation so that the paper stock is mixed as thoroughly as possible. It is advisable to allow the finished material from the hollander pass through a conical stuff mill (Jordan). The rotary knot catcher was found to be the most efficient of all the various types of machines which were used for this purpose. It is essential that this machine do not possess two wide slots between which the paper stock passes. The shaking action in the apparatus must not be too vigorous, as otherwise it is easily possible for knots to be forced through these slots.

On the Paper Machine

The paper stock, diluted, about 150 times, is then worked on the paper machine. The formation of froth in the diluted paper stock must be prevented by all means, as the coated paper must not show any foam spots. For this purpose the fourdrinier machine can be used. The wire must be shaken just a little and must not run too fast, about 75 to 80 meters per minute, according to the weight of the paper that is being made on the machine. The flow of the paper stuff must be uniform and quiet. The formation of the sheet and the felting are carried out in the usual manner. A pitch of the wire up to 20 centimeters has a favorable effect on the quality of the paper made. In order to produce a paper which will have as smooth a surface as possible, it is necessary to use care with the press rolls. Neither the wire sieve nor the felt must make any marks on the paper.

Surface coated papers, especially of the type that is used for art printing which have a thin coating, must have an absolutely smooth, hard surface and a clear unclouded look through. Consequently, these requirements must be fulfilled not only by the proper selection of materials and the proper treatment of the raw products,

prior to their delivery to the paper-making machine, but the paper-making machine itself must be operated in such a manner as to be conducive of the attainment of these qualities in the paper.

The machine must have three wet presses, of which the third is a reversing press. These presses must be kept in the best possible trim, so that the action on the paper is as uniform as possible. The rubber rolls must not have too hard a covering.

In order to obtain the necessary properties in the paper, as far as its stretch or tension is concerned, the pull on the paper in the machine should not be too great. The paper should be stretched only so far that it does not hang down and no wrinkles in the same are formed. Especially in the case of thin papers, when the tension in the paper-making machine is too great, small tears will appear in the paper without any difficulty. At first these are barely perceptible, but in the further processing of the paper, these tears or fissures in the texture of the same are widened and finally the entire width of the paper is torn asunder, and the product is entirely spoiled or else its value is reduced very considerably. Similarly, when the tension on the paper is great, the difference in the stretching, which the paper receives in the horizontal and the cross-wise directions, is much greater than that when only a slight tension is employed. Of course, the composition of the paper stock has also a very important bearing on the degree of this difference. Rag fibers stretch more in this respect than wood pulp or other cellulose materials. These rag fibers stretch more in the width than in the length, a phenomenon which may be observed in every cotton belt, which becomes shorter when wet, while the fibers swell up. The same state of affairs is found in the paper web. In this case, as well, the individual fibers lie predominately in the length, so that the influence of the stretching in the width of the paper web is more marked than in the direction of the length. Beating the paper stock for a short time only in the hollanders cannot be resorted to in the production of surface-treated papers, as is employed in the manufacture of papers which are not subjected to any longitudinal tension at all in the paper-making machine, for the reason that the surface-treated papers require a considerable degree of mechanical resistance, especially when they are used for printing stamps.

The slitters must give a good clean cut, which must, above all things, be free from dust. The rolls must be wound tightly on the spools, without it becoming necessary to reroll the material.

As has been mentioned at the beginning of this article, the coating of chromo and art printing papers is much like that of the coating of colored papers in many respects, as both the white mineral powders in the surface-treated papers and the variegated colors in the colored papers are mixed with a binding agent to produce a pulp, which is then applied to the surface of the paper. The same machines are used to apply this paste in both cases. The hand-operated surface coating process are now no longer in use. Special machines are used for this purpose, which can be used to good advantage in the commercial application of the process, because they have attained a high degree of perfection. They will produce a surface treatment, which is absolutely uniform and which cannot be secured in the hand-coated papers with even the most skilled labor. Many different machines and devices are used for this purpose; however, at this time no further space will be devoted to them, except to name a few types, such as color machines, application devices, drying arrangements, roll machines, calenders for glazing the finished paper, stamping machines, marbling machines, etc.

Colors Used in the Manufacture of Surface Treated Papers

Pigments are the most important dyes used for this purpose. Some of these coloring matters are of mineral origin, which are obtained by grinding or precipitation; likewise, the so-called lake colors are used considerably in this manufacture. By lake colors is meant various aniline and vegetable dyestuffs combined with alumina, which in this condition possess the same properties as the

pigments. Paint colors and dye liquors are used less often. In the manufacture of art printing and chromo-papers kaolin, satin white, blanc fixe (barium sulphate) are used according to the quality that it is desired to produce in the finished paper. Blanc fixe or baryta is particularly well suited for the production of pure white surface coatings on paper, and for this reason these papers are often called baryta papers. These mineral coloring materials are used in the finest degree of sub-division and are mixed to a paste with suitable hindering agents or adhesive substances. The most important of these adhesives are animal glue and particularly casein, which in the past few years has been used in ever-increasing quantities. However, artificial binding agents are also employed for this purpose. These are mostly prepared from starch, while gum, starch pastes and dextrin are used in smaller amounts. When casein is used in the production of coatings on paper, the coating can be given a certain degree of hardness and be made water-proof by the action of formaldehyde or chromium salts, when the material is subsequently exposed to light, as these chemicals render the albumen of the casein and of the animal glue as well insoluble in water.

Surface Treating Machines

The coating mixture, which has first been suitably prepared and compounded in kneading and mixing machines, is now applied to the surface of the paper in surface treating machines. These machines form the most important link in the entire process, as the success of the product will depend to a large degree on the manner in which the paper is coated in these contrivances. Cylinder color machines and cylinder coating machines have found much favor in this industry. These machines are very well suited for the manufacture of paper that is treated on one side only. In this apparatus the device, which feeds the coating mixture on the paper, is perhaps the most important part of it. An arrangement, which has been used quite universally up to the present time, consists of a trough, which is filled with the coating mixture and in which a roll turns. This roll takes up the mixture and carries it to a vertical felt, which in turn transfers the coating mixture to the paper web. The operation of this arrangement proceeds regularly and is one of the many different ways in which the coating mixture is applied to the surface of the paper through the means of felts, rolls and brushes. However, inasmuch as the coating composition has quite a long way to travel from the trough to the paper web, this arrangement is not suitable for use with mixtures which must be kept at a certain elevated temperature during the coating process. Moreover, the color easily runs down and dries on the comparatively long felt, making it gritty and full of clots of dried color.

Applying Thin Coatings on Paper

Thin coatings are produced on paper by means of the apparatus which is described in the following. The one horizontal felt in this machine is made to pass through the trough. It takes up the coating composition and transfers it rapidly to the paper web. Inasmuch as this arrangement can be regulated only at the commencement of the operation, it is unsuited for the application of thick mixtures and colors, as well as of sensitive coatings. When it is not desired to change the color in the coating mixture, then a simplified arrangement may be used, in which a felt jacket is drawn over the under roll. For vari-colored papers or marbled papers an arrangement is mostly used in which a color cloth is wound around the under roll. In this case, however, there is always present this danger, that when the color trough is well filled the color will tend to run under the felt cloth and then be pressed through the felt itself. This is avoided by the use of a regulating roll or cylinder but in this case the length of the felt is increased again, so that the color must pass over quite a space and suffer cooling before it reaches the paper web. Accordingly, in cases where the color must be applied to the paper in the hot condition, this arrangement cannot be used. There

are still many more variations of these devices and contrivances for applying the color or coating mixtures to the paper web, but these machines differ from one another mostly in the arrangement of the felts and the regulating contrivances. In the manufacture of art printing papers, in which thin coating compositions are employed machines provided with rapidly rotating brushes are also used, but these possess the disadvantage of spattering the mixtures, so that it is necessary to provide devices for protecting the paper which would otherwise be spoiled.

The Drying Machines

The coated paper now passes to the drying system. This drying apparatus is provided with a suspension device, which makes it possible to lead the surface-treated paper, hung in great loops, through the drying space. The paper cannot come in contact with the ground and is prevented from cracking by this contrivance. Directly under the roof of the drying room there are arranged two parallel, exactly calibrated, endless chains, which pass over sprocket wheels and which are supported on a number of carrying rolls. Another endless chain is connected with this pair. The latter chain has an inclined upward movement and carries angular pick-up devices at definite intervals. Round supporting rods lie in a dome-shaped container. These rods move down by their own weight, and are grasped by the pick-up devices in the chain and are lifted up with it to the top of the drying room. The paper, which moves forward from the color machine, aided by a traction device, is taken up by one of the carrying rods, and as the latter are moved upwards fastened to the pair of pick-up devices attached to the parallel chains, the paper is carried into the so-called drying lofts. The rods are now transferred from the inclined pair of endless chains, which carry them to the top of the building, to the horizontal endless chains, running along the length of the drying loft at its very top. In this way the paper is carried along in a large number of loops. When the carrying rods reach the end of the building they fall off the chains and into a container while the paper passes over a roll to the winder where it is rolled up into rolls. The time that is required for the drying of the paper, is primarily dependent on the temperature of the drying loft; consequently, the latter must be provided with fans and heating apparatus. When it happens that the paper dries slowly, it is necessary for it to remain in the drying chamber for quite a long time. As the construction of a very low drying loft is impractical and uneconomical, an arrangement is devised whereby the paper is made to travel a considerable distance within the drying lofts in retracing its tracks and following a sinuous course.

Improvement in the Machines

Various improvements have been made in these machines from time to time. The traction device, which moves the paper, is now mostly equipped with pneumatic traction rolls, which are able to pull out of the coating machine both thin and average thick papers without any danger of the papers tearing. The apparatus used for rolling up the paper after it has been dried has also been considerably improved. It is now made in such form that it will even roll up wavy paper into rolls which are absolutely free from creases. The paper web is subjected to tension by means of an adjustable system of carrying rolls and is fed to the winder at a uniform rate of speed. A double friction pulley of a very sensitive type, provided with a hand wheel for adjustment and regulation, makes it possible to wind the rolls tightly and loosely. The tension roll exerts a uniform pressure on the paper. The winding apparatus is driven by pulley and belts directly or through intermediary gears. The latter arrangement is best suited for winding heavy rolls of paper.

Apparatus for Art Printing Papers

Special apparatus is used for winding up rolls of art printing

papers. These special constructions are purposely intended to prevent slipping of the paper. A pulling drum, provided with two spur wheels, which is encircled by the paper in S form, provides a safe carrying of the paper under rather high friction.

All-Water Route for Sulphur to Watertown

WATERTOWN, N. Y., August 21, 1922.—An all-water route for sulphur shipped to paper mills in this valley may become an established fact instead of a dream, if plans now under contemplation are carried out. Investigation of the proposition is already under way and possibilities will soon be established.

Much sulphur is marketed through New York, and it is proposed to bring it through the Barge Canal, up through the Oswego division to the lake and thence by barge to Sacketts Harbor, or possibly Black River Bay points further inland. A representative of a canal shipping company has just been in Oswego investigating the facilities at that point for handling cargoes of sulphur destined for the Dexter mills.

It is understood that officials of the Dexter Sulphite Pulp and Paper Company have opened negotiations and that the facilities at Oswego have been found satisfactory. Upon arrival at that port the canal boats will be towed to Sacketts Harbor. If it is found practical, the cargoes will be lightered in scows and taken directly to the Dexter plant at the mouth of the Black river. Otherwise, it is believed rail shipments to mills in this district might be advantageously made from Sacketts Harbor.

It is figured that this water route would greatly reduce the transportation costs on sulphur and thus the cost of making paper. This idea is but one phase of the old proposition to canalize the Black river valley to carry all cargoes to Watertown and Carthage and all mill towns along the river.

Consider Standards in Grading Pulpwood

UTICA, N. Y., August 21, 1922.—Representatives of the big wood pulp mills of the state met in the Italian room of Hotel Utica, at Utica, Tuesday afternoon of last week and formulated standards for grading pulpwood. The specifications and standards will have to be approved by the different mills before they will be put into effect.

The International Paper Mill, St. Regis, Hammermill, Sherman Paper Company, Champlain Realty Company, Newton Falls Paper Company and the Diana Paper Company, were represented at the meeting.

The assemblage Tuesday drew up specifications covering three grades of pulpwood which can be used as a guide for the purchase and sale of pulpwood for New York mills. The question of employing an official check sealer for the purpose of settling possible disputes between buyers and sellers of pulpwood was considered.

American Writing Distributors in Conference

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., August 21, 1921.—A large number of leading paper merchants from every section of the country, members of the Eagle-A service houses, were in conference on Thursday and Friday of last week at the general office of the American Writing Paper Company in this city. John T. Wolohan, vice-president of the company, and Carl F. Lincoln, general sales manager, had charge of the meetings held during the conference.

A review of the past year was given by George A. Galliver, president of the company, and the workings of the Service House plan was outlined by Mr. Galliver. The paper merchants and the officials of the company expressed complete satisfaction with the progress being made under the plan. Joseph A. Borden, director of the General Service department of the company, and W. Van Hinkle, assistant director at the Chicago office, were present at the meetings.

MODERN WASHING SYSTEM FOR WASTE PAPER RECOVERY

By ANTON J. HAUG, NASHUA, N. H.

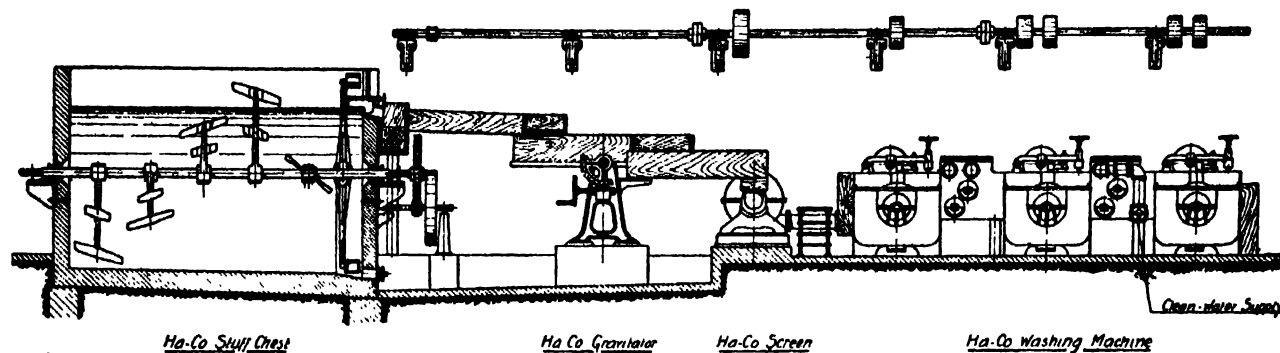
The manufacture of paper from waste papers has been much discussed recently, and the processes and apparatus employed are certain to command much interest on account of the financial success which is shown by present, up-to-date waste-paper recovery plants.

A basic feature in the operation of such plants, for securing

in one of the leading mills in this country, and undoubtedly will soon attract much attention.

Description of System

Figure 1 is an elevation of the new washing system, and Fig. 2 is a plan of the same.



HAUG MACHINERY CO NASHUA N.H.

FIG. 1

large and lasting returns is, of course, the use of efficient, well-designed machinery which has proven its value.

Use of Three-Cylinder Washer

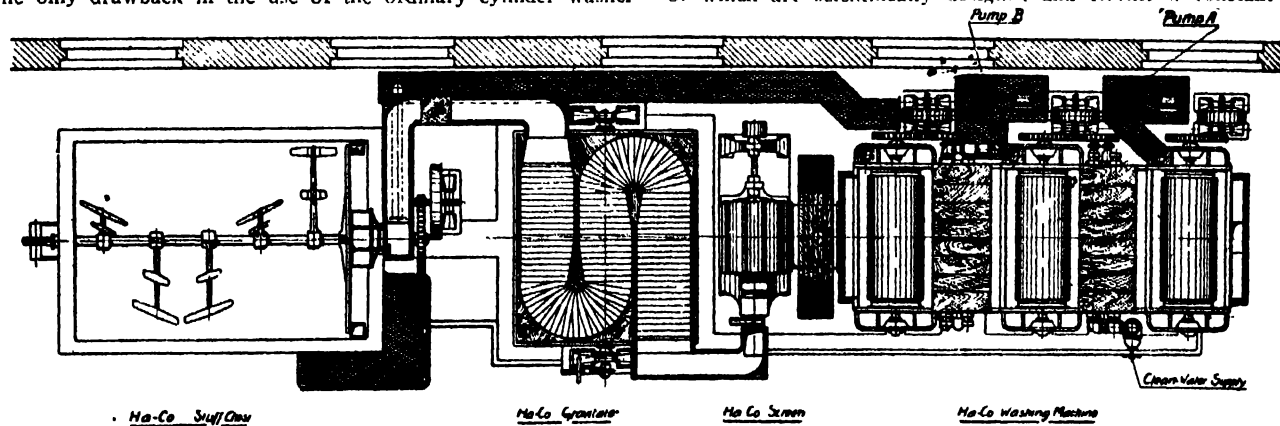
The tendency to take advantage of a continuous process has become well-marked in waste-paper recovery, and much attention has been given to the three-cylinder washer, which authorities call "the ideal type of washing machine."

The only drawback in the use of the ordinary cylinder washer

Stuff Chest and Stock Buckets

At the extreme left of the drawings, is a stuff chest and stock pump, combined, which makes it unnecessary to use a separate stock pump. The agitators in this stuff chest are of the latest type, and give a very thorough agitation and mixing, with a minimum power consumption.

At one end of the machine is a bucket wheel, the buckets of which are scientifically designed and elevate a constant quan-



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FIG. 2

was its rather crude construction. Engineers have been at work, however, perfecting this machine to a point where the most scrupulous practical, as well as scientific, man will feel satisfied as to its superiority.

Furthermore, by the addition of other suitable machinery, the work of the cylinder washing machine has been even further improved, and the stock which has been washed in the new system possesses an unusual brightness and cleanliness.

New System Operating in Leading Mill

A system similar to that shown in the cuts is in operation

tity of stock, irrespective of the liquid level in the chest. With a small hand-wheel, the quantity of stock which the buckets discharge can be regulated from the platform on the side of the chest. The buckets will elevate very heavy stock without difficulty, use less power than a pump, and the whole arrangement is extremely simple.

The buckets deliver the stock into a spout where it is thoroughly mixed with water.

(From the platform mentioned above, a view may be obtained of the operation of the entire system.)

Gravitator

Next, the stock passes through the gravitator, which removes fine, heavy dirt, such as sand, pins, etc., and fine, floating dirt, including cinders, too fine to be removed by the screen.

The gravitator replaces the crude, old-fashioned riffles, and is designed so that one man can clean it out in five to ten minutes. The setting of the dirt-retaining parts is the result of many experiments, and makes it possible to clean the stock more thoroughly and in much less space than with the old riffles.

Screen

The stock then passes through the screen, which removes the rest of the dirt and foreign matter. From the screen, the stock enters the washing machine.

Washing Machine

The washer, shown in the cuts, has many new features, which increase its capacity, make it more foolproof than any other similar machine, and simple to control.

The four-point waste water overflow gives the cylinders a maximum capacity.

The new set-in cylinder bearings add to the rigidity and stiffness of the molds, and at the same time, make the overall dimensions smaller than usual. No bearings run in water; all are lubricated by self-oiling devices.

The stock which is removed from the liquid by the cylinders is picked up by the couch rolls and the dirty water is pressed out of it. These rolls are spirally wound (not jacketed) in a new way, and have a permanently soft, elastic surface, which saves the wires and has a remarkable faculty for picking up stock. With the improved couch roll support, the perfectly round surface of the couches can be preserved indefinitely. Moreover, this new support makes it impossible for the operator to use uneven pressure on the couches.

The pressed-out stock drops into an agitating and mixing trough, which is equipped with special, very efficient agitators, where the mats of stock are broken up and diluted with water.

The standard washer consists of three cylinders and two agitating chambers.

Economical Use of Water

The water consumption is small, on account of the economical way in which the wash water is handled. 80 per cent to 90 per cent of the ink is removed in the first cylinder. This water from the cylinder is not used again for washing. The water from the second cylinder is pumped, by pump B, to the stuff chest, where it is used for thinning the stock delivered by the buckets. The water from the third cylinder, which is, of course, the cleanest, is pumped by pump A into the first agitating trough and here used as thinning water. The only place where clean, fresh water is used is in the final washing operation in the last agitator trough.

Complicated Mechanism Avoided

The entire mechanical equipment has been standardized, and all complicated mechanism has been eliminated. No special attendant is needed, since the entire system is continuous and automatic, requiring little care after it has been started, and one man can easily start it.

Low Power

The power consumed is comparatively very small—a factor which has been an important influence in the adoption of such systems.

Summary of Advantages

The advantages of the system described may be summed up as follows: (1) Simple to control; (2) Small power; (3) Small quantity of water consumed; (4) No special attention required; (5) Cleaner and brighter stock.

EXPERIMENTS WITH RUBBER LATEX IN PAPER-MAKING

By FREDERICK KAYE

The latex supplied contains about 30 per cent of actual dry rubber as weighed after coagulation and about 3.5 per cent of ammonia. Therefore the essential condition for its use in paper-making is its extensive dilution with water before addition to the beaten pulp. The more it is diluted the more effective it is.

It is necessary to keep the vessels containing the latex well sealed until it is to be used.

It is advisable to take out a pint or more and put into a stoppered bottle for hand-made tests. Such an amount will be sufficient for a great many experiments.

For example—If 10 cc. of latex containing 3 grams of rubber be diluted to 100 cc. and then 10 cc. of this solution be further much diluted and added and mixed with 500 grams of wet pulp we should, after coagulation, be able to make 50 grams of paper containing 0.6 per cent of rubber in the dried paper and the experiment can be repeated in any ratio of rubber content. The coagulant may be alum with or without rosin size.

The range of commercial experiments is very wide and until experience has been gained it is best to proceed with caution.

While a paper made to contain 1 per cent of rubber will often give the required result many experiments on a commercial scale have been successfully put through with latex to give as low a rubber content as 0.1 per cent and 0.2 per cent on the dried paper. For example, common wrapping made from exceedingly cheap waste paper has been much improved with rubber latex to give a percentage of rubber as low as 0.2 per cent. To do this one-fifth of a gallon of latex was diluted with, say, 10 gallons of water and added slowly to 300 lbs. of beaten material in the beater, as the beaten pulp was moved round in the beater.

The diluted latex must be passed through a fine sieve or cloth bag, etc., to remove dirt or any particles of coagulated rubber.

It is important that in the case of soda pulp the alkalinity is overcome.

To make one ton of paper to contain 1.0 per cent of rubber approximately 8 gallons of latex, containing 30 per cent of rubber will be required. This must be proportionately well diluted as set out above and added slowly to the moving pulp in the beater.

If the paper is to be tub-sized the rubber latex may be coagulated by the addition to the latex-treated pulp of sufficient alum or magnesium sulphate, and in some other cases of relatively small amounts of such acids as acetic acid. After the action of the coagulant for sufficient time, until the water in the beater becomes relatively clear the material is transferred to the stuff chest and passed over the papermaking machine in the usual manner. If the paper is to be engine sized the rubber latex may be added before, or after, the addition of the size and alum. In these cases sufficient alum must be added to overcome the ammonia and to coagulate the rubber. The contents of the beater may be just faintly acid in reaction. With a sulphite pulp a less quantity of alum may be needed.

In many cases I add the rubber latex before the sizing process. To get a good water-repellent paper with relatively small amount of rubber ordinary sizing methods must be adhered to as well.

As each paper maker will only have a few gallons of latex for the first experimental tests it will perhaps be best to arrange to do three or four experiments with, say, 300 lbs. beatings rather than use the whole in one experiment.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Sulphite Manufacture and Equipment

The Reaction Between Iodine and Sulphurous Acid.—R. H. Macauley. *Chem. Soc. Trans.*, cxi, 552-556 (March, 1922).—Sulphurous acid is quantitatively oxidized to sulphuric acid by decinormal iodine without the separation of sulphur. The intermediate formation of the yellow compound SO_2HI , which occurs in solutions of moderate concentration, has no influence on the final result. The low results obtained when sulphurous acid is exposed to the air during the titration are due entirely to evaporation of sulphur dioxide, the amount of atmospheric oxidation being negligible. Sodium sulphite solution is more readily oxidized than sulphurous acid; consequently atmospheric oxidation is a disturbing factor when sodium sulphite is titrated with iodine. Since the reaction between sulphurous acid and iodine is not reversed under the state of dilution obtaining in volumetric analysis, the addition of sodium carbonate to neutralize hydriodic acid is unnecessary, and since a sulphite solution is so quickly oxidized it is not necessary to allow a time interval for such oxidation by iodine to be completed.—A. P.-C.

Preservation of Starch Solution.—N. Kano. *J. Chem. Soc. (Japan)*, xlii, 9745 (1921); *Chem. Abs.*, xvi, 1055 (Apr. 10, 1922). Alcohol, ether, acetone, camphor, toluene, phenol, chloroform, glycerol, naphthalene, carbon disulphide and hydrochloric acid were tried as preservatives for starch solution for use in iodometric titrations. The most satisfactory preservative is hydrochloric acid (0.5 cc. of twice normal acid to each 50 cc. of starch solution), when the titration is to be done in acid medium, and carbon disulphide (one drop to each 50 cc.) when in neutral medium.—A. P.-C.

Sulphite Waste Liquor Lactone.—S. V. Hintikka. *Pappers Travaru-och Industrisdrift for Finland*, No. 10, 150 (1921); *Chem. Abs.*, xvi, 491 (Feb. 10, 1922).—The author repeated B. Holmberg's experiment (See *Extraction of Sulphite Waste Liquors with Ether and Benzene* this journal, lxxii, No. 14, 40, Oct. 6, 1921) using birch and aspen woods, but failed to obtain the crystalline lactone reported by Holmberg. It may be that this compound is characteristic of the sulphite waste liquor from pine wood.—A. P.-C.

Process of Recovering Solids from Waste Pulp Liquors.—U. S. A. Patent 1,396,028, Nov. 8, 1921.—Hot waste pulp liquors are concentrated and cooled by "self-evaporation," further quantities of water are then frozen out and the concentrated liquor is dried in the usual manner.—A. P.-C.

High Grade Sulphite Pulp.—Eng. Patent 170,964, E. Bronnert, Dec. 21, 1921.—Wood is cleaned, chipped, and treated with dilute sulphuric acid under pressure, drained, and neutralized. The wood lignin is thus decomposed and subsequently dissolved by boiling in known manner with calcium or calcium and magnesium bisulphite under pressure, yielding a nearly pure alpha-cellulose particularly suitable for making pure viscose and cellulose acetate.—A. P.-C.

Process of Making Wood Pulp.—U. S. A. Patent 1,413,716, F. K. Fish, Jr., April 25, 1922.—The chips are steamed, placed under vacuum, treated with superheated water to dissolve out the water soluble constituents and melt the resins, placed under partial vacuum, treated with hot acid liquor under pressure, treated with cold water as soon as the hot liquor has been removed, and finally washed and bleached as usual.—A. P.-C.

Soda and Sulphate Manufacture and Equipment

The Use of Waste Lime for Fertilizer Purposes.—Oskar Lecher. *Chem. Ztg.*, xlv, 794-795 (1921); *Chem. Abs.*, xvi, 308 (Jan. 20, 1922).—Analysis of the lime obtained after treatment of straw with milk of lime under 3 to 4 atmospheres shows that the

content of nitrogen, magnesia and phosphoric acid are too small appreciably to increase its fertilizer value, but there are no substances harmful to plants. The soluble silica (6.16 per cent on the air-dried sample) advantageously increases the absorptive power of the soil.—A. P.-C.

Process of Recovering Solids from Waste Pulp Liquors. See E.

Pulp Treatment and Drying—Operation and Equipment

Hydraulic Presses in Paper and Board Mills.—A. Lambrette. *Papeterie*, xlv, 206-210, 242-253 (March 10 and 25, 1922).—A discussion of the various methods of modernizing old pressing equipment or of adding to it, in the most economical and efficient manner.—A. P.-C.

Paper Manufacturing and Equipment

Maintaining Basis Weights of Paper.—Parker K. Baird, Inland Empire Paper Co., Millwood, Wash. *Paper Trade J.*, lxxiv, No. 15, 185-191 (April 13, 1922); *Paper*, xxx, No. 7, 32-37 (April 19, 1922).—A description of the system of records used successfully at the Inland Empire Paper Mill.—A. P.-C.

Process for Treating Waxed Paper Stock.—U. S. A. Patent 1,410,739, S. H. Dunwell, March 28, 1922.—The waxed stock is placed with water in a beater having a vertical shredding roll with teeth at one end of the midfeather and a vertical beater roll with acting bedplate at the other end, the two rolls being connected together by means of a belt and driven together. Means are provided for heating the stock either directly or indirectly. Sufficient hydrochloric acid is added to decompose the size and aluminum compounds in the stock, and the stock is heated above the melting point of wax to be removed (e. g. 150° F. for paraffined stock). The freed liquid wax rises to the surface and is removed by a trough-like skimmer and filtered into a tank. After treatment in this beater, the stock is dewatered and then treated in a second beater with an alkaline solution, e. g., soda ash.—A. P.-C.

Continuous Pulp Extractor for Beaters.—U. S. A. Patent 1,414,703, L. T. Murphy, May 2, 1922.—The stock is withdrawn from the beater by means of centrifugal force as it leaves the roll and is then passed through a rotary screen to separate the fine from the coarse stock.—A. P.-C.

Felt Guide for Pulp and Paper Machines.—U. S. A. Patent 1,414,940, F. Ford, May 2, 1922.—The device comprises a suction box in contact with the felt. The suction box is connected to a suction line which includes a water column at the bottom of which is a reciprocable member, the position of which is controlled by the effective weight of the column due to fluctuations in pressure in the suction line. This member regulates the angular relation between the felt and a supporting roll whereby the felt is caused to creep edge-wise on the roll to correct any displacement.—A. P.-C.

Means for Harmonizing the Rotations of the Couch Roll and the Breast Roll.—U. S. A. Patent 1,410,856, F. G. Warburton, March 28, 1922.—The patent practically covers an extension of the Harland Interlock Drive to cover driving the couch roll and the breast roll by two separate electric motors suitably regulated so as to make them run in harmony.—A. P.-C.

The Paper Machine Hood as an Investment.—H. S. Taylor and H. T. Baker, Management Engineering and Development Co., Dayton, Ohio. *Pulp and Paper*, xx, 271-273 (April 6, 1922); *Paper Trade J.*, lxxiv, No. 13, 48-50 (March 30, 1922); *Paper*, xxx, No. 5, 12-14 (April 5, 1922).—A discussion of the function of the paper machine hood in removing the moisture laden air over the dryers of the machine. Figures are given, based on actual operations in paper mills, showing that the cost of installing the hoods is not more

than half the yearly saving in fuel consumption which they effect. In the case of the Briner or other economizer systems, the differential of removal with and without hoods is greater with the system than without it.—A. P.-C.

Manufacture of Sheets or Webs of Hydrated Fibrous Cellulose.—Eng. Patent 173,971, C. F. Cross, Jan. 4, 1921. *Paper*, xxx, No. 6, 14 (April 12, 1922).—Sheets or webs of fibrous cellulose which has been hydrated as described in Eng. Patent 126,174 of May 17, 1918 (treatment with caustic soda and carbon disulphide) are made on a paper machine. The sheet is drained by treatment with a reagent capable of neutralizing the alkalinity and decomposing any xanthate present, thus causing a reversal of the hydration process. Suitable reagents are weak acids, such as acetic or sulphurous acids, or easily dissociated salts of stronger acids, such as aluminium sulphate or zinc chloride or sulphate, or sulphite waste liquor. The reagent is sprayed on to the web at a suitable point on the machine, *e. g.*, before the suction boxes or between the first and second press rolls on a Fourdrinier, or after moulding in the manufacture of moulded articles.—A. P.-C.

Method of Mounting Stone Press Rolls.—U. S. A. Patent 1,413,436, J. W. Vedder, April 18, 1922. Also Can. Patent 219,084, May 30, 1922.—With the ordinary method of mounting of stone press rolls, if the bearings become hot the roll is liable to crack. This is overcome by mounting the stone roll on a tubular metal shaft, preferably of forged steel, the heat radiating surface of which is sufficient to dissipate the heat produced at the bearings. The shaft may be water cooled.—A. P.-C.

Safety Device for Paper Winders.—U. S. A. Patent 1,412,994, W. E. Beadle, assignor to Nekoosa Motor and Machine Co., April 18, 1922.—The patent covers a device for preventing the distance between two rolls of paper, one of which is being wound and the other unwound, from falling below a fixed minimum value. As soon as this distance is reached the paper on the roll being wound is automatically torn.—A. P.-C.

Recent Developments in Papermaking.—T. D. Nuttall. *Paper*, xxx, No. 6, 7-11, 16 (April 12, 1922).—An outline of recent improvements in paper machine construction, such as increase in width and speed of machines, suction roll, automatic paper carriers, automatic changing of reels, paper machine drives.—A. P.-C.

Driving Device for Paper Winders.—U. S. A. Patent 1,404,284, R. E. Fougner, Jan. 24, 1922. Also Can. Patent 215,430, Jan. 31, 1922.—Same as French Patent 505,614. See *Pulp and Paper*, xix, 483, May 5, 1921.—A. P.-C.

Slitting and Roll Winding Machine.—*Paper*, xxx, No. 8, 12 (April 26, 1922); *Paper Trade J.*, lxxiv, No. 17, 30 (April 27, 1922).—Brief description of Camachine Simplex Type 40, Model BM, which has been designed especially to meet the requirements of the paper box manufacturers.—A. P.-C.

Manufacture of Pliable Fiber Board.—U. S. A. Patent 1,406,410, J. C. Peabody, Feb. 14, 1922.—The beater furnish is treated with 3 to 15 per cent (on the weight of dry fiber) of "cellulose in a liquid state." Dry sheets prepared from this material are soaked in a solution of sodium chloride or calcium chloride or a mixture of both until thoroughly saturated, removed from the solution, and dried. It is claimed the material thus prepared has all the characteristics of leather (soft, tough, pliable, not disintegrated by water) and is particularly suited to the manufacture of boots and shoes. It is of great tensile strength even when wet.—A. P.-C.

Means of Applying Paste to Paper.—U. S. A. Patent 1,412,897, B. Selby, April 18, 1922.—A. P.-C.

Method of and Apparatus for Impregnating Paper with Phenol Condensation Products.—U. S. A. Patent 1,414,462, L. T. Frederick, assignor to Westinghouse Electric & Manufacturing Co., May 2, 1922.—A. P.-C.

Method of Connecting and Corrugating Papers.—U. S. A.

Patent 1,410,879, F. H. Bither, assignor to American Box Board Co., March 28, 1922.—Narrow strips of paper (trimmings from rolls, etc.) are overlapped and passed between corrugating rolls, which are set very close together (at most one thickness of paper apart), so that the overlapping strips are subjected to enormous pressure practically crushing the two thicknesses of paper to the thickness of one. At the same time the rollers are heated to 250° F. or more.—A. P.-C.

Hydraulic Presses in Paper and Board Mills. (Lambrette). See G.

Articles Produced from Pulp and Paper

Composition for Coating Paper Containers.—U. S. A. Patent 1,414,256, F. Coates, assignor to Federal Products Co., April 25, 1922.—One part of gelatin is soaked for two hours at room temperature in two parts of water, the mixture is heated to 120° F., and a mixture of one part of glucose and half a part of glycerin added. To this is slowly added a previously prepared mixture of 2 parts of water, 1.5 parts of glucose, 0.5 parts of glycerin, and one part of acetone. The resultant mixture (at a temperature of 110° F.) is applied in any desired manner. The resultant compound dries very slowly, has practically no tendency to sour, makes a highly efficient preservative and possesses an elasticity which makes it specially suitable for coating paper cans, etc.—A. P.-C.

Cardboard Can.—Can. Patent 215,340, H. G. Thomson, Jan. 24, 1922.—A. P.-C.

Cardboard Box Making Machine.—Can. Patent 214,685, W. C. Ritchie & Co., assignee of M. J. Milmo, Dec. 13, 1921.—A. P.-C.

Paper Cup Forming Machine.—Can. Patent 214,401, W. W. Bevan and C. E. Clarke, Nov. 29, 1921.—A. P.-C.

Cardboard Carton.—Can. Patent 214,474, Duncan Lithographing Co., Ltd., assignee of F. B. Close, Nov. 29, 1921.—A. P.-C.

Waterproof Fibrous Tubes.—U. S. A. Patent 1,396,021, F. A. Buttingham *et al.*, Nov. 8, 1921.—Fibrous materials, such as paper tubes, are impregnated with molten sulphur, which is allowed to cool and crystallize on the fiber. The material is then further impregnated with a solution of phenol condensation product, which, after evaporation of the solvent, is polymerized by heat.—A. P.-C.

Waterproofing Fibrous Substances.—U. S. A. Patent 1,396,060, G. A. Richter *et al.*, Nov. 8, 1921. Fibrous materials impregnated with sulphur are further impregnated with a water-repellent compound, which is solid at ordinary temperatures, *e. g.*, bitumen.—A. P.-C.

Planning and Construction

Use of Creosoted Wood Block Floors in Pulp and Paper Mills.—Lambert T. Ericson, Jennison-Wright Co., Toledo, Ohio. *Pulp and Paper*, xx, 182 (March 9, 1922).—The chief advantages of creosoted wood block floors are: impervious to acid solutions, can be installed with waterproof bituminous binders forming a waterproof surface, stand up under the heaviest and most severe conditions of trucking, afford comfortable footing, non-conductors of heat, are easily repaired. They should be designed and installed by those who are expert in that line; but the ordinary workmen around plants can be easily instructed sufficiently for the general run of maintenance.—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals from Which Abstracts Have Been Prepared for This Issue

Chem. Abs.	.....	Chemical Abstracts, Charles L. Parsons, 1709 G St. N. W., Washington, D. C.
Chem. Soc. Trans.	.....	Journal of the Chemical Society (London)—Transactions, Gurney & Jackson, 33 Paternoster Row, London, E. C. 4, England.
Chem. Ztg.	.....	Chemiker Zeitung, Walter Roth, Cöthen, Germany.
J. Chem. Soc. (Japan)	.....	Journal of the Chemical Society of Japan. The Chemical Society of Japan, College of Science, Imperial University of Tokyo, Tokyo, Japan.
Kunststoffe	.....	Kunststoffe, J. F. Lehmanns, Paul Heyerstr. 26, Munich S. W. 2, Germany.
Paper	.....	Paper, 251 West Nineteenth St., New York City.
PAPER TRADE J.	.....	Paper Trade Journal, 10 East Thirty-Ninth St., New York City.
Papeterie	La Papeterie, 9 Rue Lagrange, Paris (5 ^e), France.
Pulp and Paper	Pulp and Paper Magazine of Canada, Gardenvale, Que., Canada.

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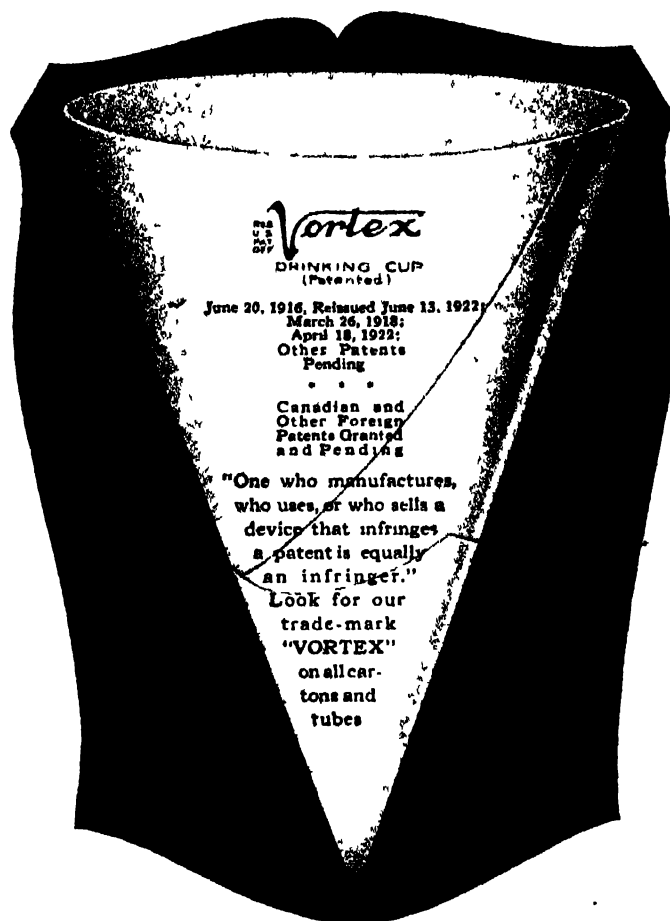
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Obituary

Frederick Bertuch

After a brief illness at his country home at Babylon, L. I., Frederick Bertuch, a special partner in the firm of J. Anderson & Co., of 21 East 40th street, New York, died on August 17.

He was born in Offenbach, Germany, February 18, 1856. Coming to this country in his early boyhood, he attended private schools in Hoboken, N. J., and his first business experience was with export houses. In 1883, while connected with the importing house of H. de Maziere, in which he was interested, he began the importation of wood pulp and was the first importer of groundwood pulp in this country. In 1885 he left this concern and founded the Norwegian Wood Pulp Company, of which he was president. Under his guidance, this company gradually expanded its business until it was importing all grades of sulphite and soda pulps. In 1891 Mr. Bertuch organized the firm of Frederick Bertuch & Co., with his father as a partner, and this firm succeeded to the business of the Norwegian Wood Pulp Company. Also at this time Mr. Bertuch was gradually extending his trade among the paper mills, and his business increased steadily. His father retired from the firm in 1908. The firm represented exclusively in this country the Kellner-Partington Paper Pulp Company, Ltd., of Manchester, England, with mills in different European countries.

Mr. Bertuch was always noted for his strict integrity, conservatism and his quiet and unassuming manner. He was an indefatigable worker and the proud possessor of a high order of business integrity which he seemed to radiate all through his business life. In March, 1908, he was awarded the decoration of the Order of St. Olaf by the King of Norway. This was conferred upon him in appreciation of his efforts in promoting Norwegian interests in the United States. On January 1, 1912, he retired from active business, retaining an interest as special partner in the firm of J. Anderson & Co., which succeeded that of Frederick Bertuch & Co.—the senior member of the firm of J. Anderson and Co. having been connected with him in business since 1883. Mr. Bertuch, while in business, was for a number of years the president of the Association of American Wood Pulp Importers and active in the national legislation affecting the wood pulp industry. At the time of his decease he was a member of the Klopstock Lodge, No. 760, F & A. M., of Stapleton, S. I. Also a member of the New York Athletic Club and the Uptown Club of Manhattan.

On January 1, 1923, he was to retire as special partner in the firm of J. Anderson & Co., desiring to be relieved of all business connections. He is survived by his wife, Minnie Davis Bertuch, a relation on the maternal side of Jefferson Davis of Confederate fame and on the paternal side a descendant of the old Colonial and well-known Bradford family. The funeral services took place at noon, August 21, in the Lutheran Church of the Holy Trinity, 51 Central Park West, New York City, and interment was held at Woodlawn Cemetery. His old friends acted as honorary pallbearers, among them being: William Bianchi, Emil Seidenberg, G. A. Edler, Charles A. Gardner, James Rogers, Henry Rogers, Henry Gluck, Dr. Viggo Drewsen, Joseph H. McCormick, Edward Milton Adams, Morris Gintzler and George von Karlowski.

Bradley C. Bauter

GRAND MERE, IND., August 21, 1922.—Grand Mere has lost a highly esteemed citizen and the Laurentide Company, Ltd., one of its most valued employees in the death of Bradley C. Bauter, who passed away Monday morning, August 14. A hurried operation by Dr. F. A. C. Stringer, a specialist, performed the preceding night was to no avail. Intestinal obstruction was given as the cause of his death.

Mr. Bauter was born in Laforgeville, N. Y., on October 29, 1870. He was graduated from Watertown High School, and then learned

the trade of machinist with the Watertown Steam Engine Company. He was employed a number of years with the Bagley & Sewall Company, paper machine builders of Watertown, and subsequently with the New York Air Brake Company of Watertown. For the last fifteen years he was with the Laurentide Company in various capacities in the Repair and Maintenance Department and for some time has been Superintendent of this department.

He was very popular with his men and universally well liked. He was a member of the Watertown Royal Arcanum Lodge; Exempt Firemen's Association of Watertown; Jefferson Union Lodge No. 124, Independent Order of Oddfellows, Watertown, N. Y.; Watertown Lodge No. 49, A. F. & A. M., also Watertown Chapter and Commandery and Media Temple of Mystic Shrine. He leaves a widow, Nellie, of Grand Mere, and a number of relatives in New York State.

Interment ceremonies were held on August 17 at Watertown, N. Y., under the auspices of Watertown Commandery, Knights Templar, following a brief funeral service in Grand Mere.

William B. Bitting

PHILADELPHIA, Pa., August 21, 1922.—William B. Bitting, more widely known as "Pop Bitting" and who for the last twenty-five years has represented the Thomas W. Price Company on the road throughout Eastern Pennsylvania, New Jersey, Delaware, Maryland, and the District of Columbia, died at his summer home, Pitman Grove, N. J., on Thursday of last week. The interment was in Mt. Peace Cemetery, Philadelphia, services being held in the afternoon from his late residence, 403 Chambers avenue, Camden, N. J. Bitting was almost four score years of age. He had a splendid record of service in the Civil War. Before his connection with the Price company, a quarter century ago, he served for an equally long time with the old Nescochague Manufacturing Company, Philadelphia, and J. E. Linde & Co., New York. He was popular wherever he called, and was perhaps the best known and certainly one of the oldest paper salesmen in point of continuous service traveling out from Philadelphia. He is survived by a widow, daughter and grandchild.

Carl Bache-Wiig

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Me., August 21, 1922.—Carl Bache-Wiig, chemical engineer and sulphite expert, for nine years a resident of Portland, died suddenly at Randolph, N. H. Mr. Wiig had just returned from Wisconsin when stricken in the summer home of his family.

Mr. Bache-Wiig was a native of Norway, where he received a thorough education. He had mastered his profession of chemical engineering as applied to the paper industry and his services had been sought for a number of years by paper manufacturers in the United States and Canada. Recent connections were with the International Paper Company, at Glens Falls, N. Y., and the Brown Company, at Berlin, N. H. He was a member of the Masonic fraternity and is survived by his wife, Bertha M., two sons, Carl O. and John, and two daughters, Sara, of Portland, and Ruth, who has a secretarial position with the League of Nations at Geneva, Switzerland.

Robert W. Hemphill, Sr.

YPSILANTI Mich., August 19, 1922.—Robert W. Hemphill, Sr., who, with Cornelius Cornwell, started the Peninsular Paper Company, died at his home here last week at the advanced age of 84 years. Mr. Hemphill had resided in Ypsilanti for 72 years. He was one of the oldest and best known bankers in Michigan.

He organized the Ypsilanti Woolen Mill Company and the Ypsilanti Flouring Mill Company and was also instrumental in the development of the Electric Light and Power Company and in constructing the street railway.

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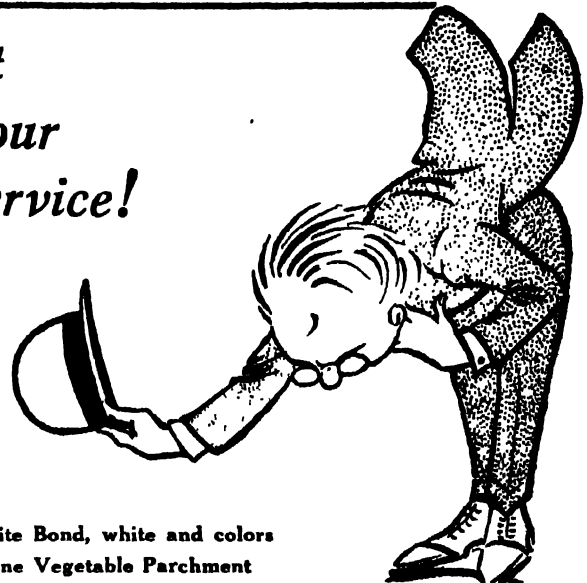
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New York Trade Jottings

W. G. MacNaughton, Secretary of the Technical Association of the Pulp and Paper Industry, leaves Thursday of this week for Springfield, Mass., where he will confer with George Williamson, President of the Association.

* * *

Isaac Eisenberg, secretary of the Hudson Bag Company, 516 Fifth avenue, New York, will return from Europe the latter part of this month on the *Berengaria*. Mr. Eisenberg and his family have been spending their vacation abroad.

* * *

The Nashua Gummed and Coated Paper Company has recently added a Package Sealing Division, consolidating this with the other divisions and locating in enlarged quarters at 291 Broadway, New York. The telephone numbers are Worth 1928, 1929 and 7205.

* * *

M. L. Macauley Company, Inc., 30 East 42d street, announces that W. B. Kearney has joined its selling force. In addition to calling on the merchants with the product of the mill which the Macauley Company represents, Mr. Kearney will devote his efforts to several lines of fine papers now being handled by the firm.

* * *

John Carroll, formerly superintendent for the Hercules Paper Company, and now in charge of the Ft. Alice plant of Whalen Brothers, pulp manufacturers of Vancouver, B. C., represented in New York by Robert Dollar & Co., of 11 Moore street, is among the New York trade visitors of this week. Mr. Carroll is touring the Eastern states, visiting users of pulp manufactured by the Whalen Company.

* * *

Under date of August 16 the Traffic Bulletin of the National Association of Waste Material Dealers, Inc., Times Building New York,

has been published. An item of interest is the warning to rag importers that an affidavit from them will be required certifying that their consignment of goods contains no narcotics, liquors, or other contraband articles. This step has been taken by the United States Appraisers Office, 641 Washington street, New York, to put an immediate stop to the smuggling of drugs and alcohol in foreign rag bundles.

* * *

Robert Gair, Brooklyn paper manufacturer, saved \$30,000 when the Newark police captured Harry Monet, who left Sing Sing to serve his country in the hazardous rôle of spy in Germany during the war and who then returned to his rôle of crook. Mr. Gair was among Monet's first victims, the latter having forged the name of the paper manufacturer to a check for \$30,000, which, according to the police, he subsequently had certified by the Title Guarantee & Trust Company of Brooklyn. A sensational scheme had been worked out whereby two innocent messenger boys were hired to act as "go-betweens" in the forgery plots. The police say Monet has confessed his guilt.

* * *

The Conference Committee on Loading, formed by the Merchants' Association of New York, has negotiated with interested parties and has secured an agreement that the following rates will be charged. Loading from platforms of warehouses, 1½ cents per 100 pounds; loading from sidewalks, piers, docks, or cars, 2½ cents per 100 pounds. It has also been agreed that shippers and consignees shall be free to load their own freight if they desire and will not be subjected to improper treatment on the part of the loaders if they do their own loading. If shippers decide to discontinue loading by their own employes the dock loaders will do the work if the change is permanent, but where consignors decide to load a part of their own freight on certain occasions, the regular loaders can decide whether they will load other shipments for such consignees. This agreement is for 90 days after which time it may be continued indefinitely or terminated on 30 days' notice.

VELURE SURFACE

are recognized by the trade as

Standard Felts for Finish
and
VELURE Felts

are made only by

LOCKPORT FELT CO., Newfane, N. Y.

Adopt the VELURE System for Class

Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

PAPER MAKERS CHEMICAL CO. WESTERN PAPER MAKERS CHEMICAL CO.

EASTON
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PENSACOLA

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ST. AUSTELL

CLAYS ROSIN SIZE
SATIN WHITE FOAM KILLER

FELT SOAP and OTHER SPECIALTIES

SUPERIOR CHEMICAL CO.

JOLIET, ILLINOIS

Manufacturers

PAPER MAKERS' and FILTER

ALUM

Perforated Metal Screens For Pulp and Paper Mills

STEEL, COPPER, BRASS, BRONZE
and other Alloys

punched for Centrifugal and
Rotary Screens, Pulp Washers,
Drainer Bottoms, Filter Plates, etc.



.085 Inch Round



$\frac{1}{4} \times \frac{1}{4}$ Inch Slots

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The Union Sulphur Company

Producers of the Highest Grade
Brimstone on the market . .

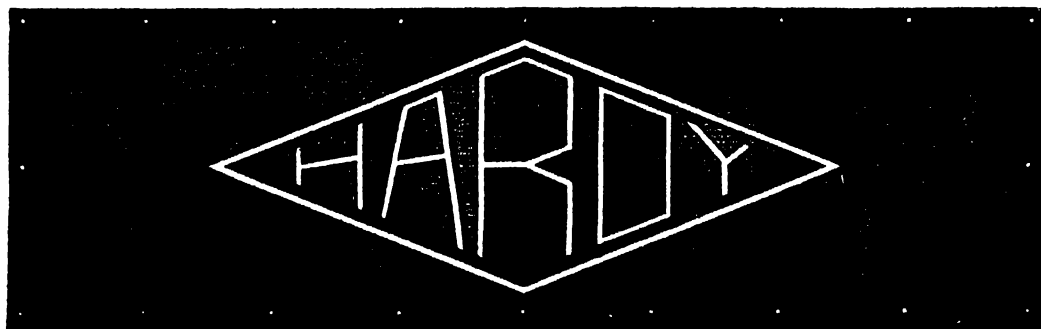
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WILLIAM A. HARDY & SONS COMPANY, Fitchburg, Mass., U.S.A.



New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, August 23, 1922.

Now that the bulk of coal difficulties have been lifted from the shoulders of paper manufacturers through the strike settlement, there remains but the one obstacle in the path of smooth running, well-oiled fall business—the rail tieup. Of course several months will be required to readjust distorted fuel conditions and get every industry back in working order again with coal at its former price. It has even been predicted that the strike will have the effect of bringing about an entire winter of high coal. If there were only some prospects of a let-up in the stand taken by the rail workers, however, manufacturers could almost overlook the additional fuel cost in view of the excellent prospects evidenced in practically every other industry in the country.

Representative bonds and stocks have during this month touched new high levels for 1922. Retail sales in New York City were larger the first two weeks of this month than for any other similar period of time this year. Building is increasing in leaps and bounds, the contracts awarded in twenty-seven Northeastern states amounting to over \$350,000,000 for last month. A gain of 60 per cent has been made in this industry over the first seven months of 1921. Crop prospects are better than they have been in many years and Bradstreets' records show that there has been a decrease of 5.3 per cent in commercial failures in the last month. There were 589 new companies incorporated, each of which had an authorized capitalization of \$100,000 or over, as opposed to 514 new companies in June.

On the whole the industrial outlook is particularly bright. In many branches of the paper industry, where the popular impression has been that business has been artificially bolstered up due to the abnormal strike conditions, there will probably be no "let-down" in demand even after these difficulties have been cleared away. Good business is justified on its own merit for the coming season. It does not need the prop of artificial strike demand to keep it from sinking to the panicky levels it has reached in the last twelve months.

News print continues to hit the high spots and there has been absolutely no evidence of a cessation in demand as a result of the recent increase in prices to four cents a pound. Current rumor among news print concerns has it that this fall and winter may bring still much higher prices than have prevailed thus far in 1922. Publishers are consuming more of the commodity each week to all appearances and in view of the combined coal shortage and rail situation tending to retard contract withdrawals, another rise for the last quarter may well be expected.

Book is enlivening to a considerable extent and prices are steady to firm. Publishers are entering the market on a larger scale than ever before and it is freely predicted that September should usher in one of the most progressive seasons ever known in the book paper industry. Jobbers' stocks are still low and as yet no variations in price have been recorded.

Fine papers are beginning to assert themselves again in that there is a steadily growing demand for ledgers and both low and medium priced bonds. The better grades are still inactive, but when signs of a business revival in these lines crop up in the early fall there is no doubt but that merchants will again stock up to normal capacity to cover the demand.

Tissue mills are reported to be sold up straight through the next two or three months and are even passing up orders due to the fuel and rail situation. Most tissue manufacturers have withdrawn price quotations or have retained them on a purely nominal basis. Raw materials are practically impossible to secure in adequate quantities and producers are at a loss to find means of shipping their finished product.

In comparison with many of the other grades of paper, kraft is

rather slow moving at the present time. This situation is one, however, that may be attributed to the summer months rather than to any particular industrial obstacle. The market is in a firm condition, however, and prices are, in general, higher than they have been for some time. As a rule wrapping manufacturers are hesitating before taking orders for either kraft or manila paper for shipment very far in the future. The majority are contracting only on their ability to produce the commodity and are guarding themselves amply in this manner.

The brisk demand for paper box-board still continues and the coal strike has evolved a seller's market with paper box manufacturers buying freely and worrying only about the source of their fall's board supply. New York merchants are making the proverbial hay while the sun shines in that considerably higher prices are being named during the withdrawal of quotations by producers. The unsettled conditions have placed all prices on a nominal basis.

Mechanical Pulp

Groundwood prices are steady and the New York market is characterized by an increasingly firmer tone. Dealers are watching news print go up and up and still remain in excellent demand and express the opinion that mechanical pulp will not delay long in following its example. On the whole the ground wood market is in a very sound condition, considering the season of the year, and there is no doubt but that business during the fall and winter months will flourish.

Chemical Pulp

Consumers are absorbing regular amounts of chemical pulp, giving the market a steadiness that bodes well for a mid-summer month. Concerns handling the commodity look forward to a series of price revisions in September and report that there has been less strenuous competition from Scandinavian and other European countries in this field in recent weeks.

Old Rope and Bagging

Rope is easy for the present, No. 1 manila selling in the neighborhood of 575 cents a pound at shipping points. This price has even been bettered, according to several authorities. Old bagging, on the other hand, is being turned over in considerable quantities. Roofing bagging is in excellent demand at 90 cents per cwt., while No. 1 scrap is doing well at \$1.10.

Waste Paper

All grades of old paper are still in very strong demand and prices are quite firm. Dealers in this city are asking as high as \$2 per hundred pounds on No. 1 heavy books and magazines and up to 1.70 cents a pound for mixed books. No. 1 hard white shavings are upwards of 3.75 cents and are running a close race with new soda pulp. Dealers feel that conditions are aligning themselves for an unprecedented business this fall.

Rags

Roofing rags, the stabilizing factor in the rag situation, are being turned over in large quantities and with considerable regularity, giving the market a very firm undertone. Western dealers are reported to be asking an average of 20 cents per cwt. more on No. 1 roofing stock than the prevailing New York price of 1.30 cents a pound, f.o.b. Packers and merchants in the east are having practically no difficulty in getting rid of even the bulky grades of rags during the present active buying spell on the part of roofing manufacturers, and thus the better grades are being retained at even higher prices.

Twine

With prices fairly firm even at present, twine dealers are exceedingly optimistic over the prospects for higher prices and a booming business in early September. It has been stated that several New York twine merchants have anticipated this condition, which is only two weeks in the future, and have already raised the price on several grades of twine.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations August 22, 1922:

	BID.	ASKED.
American Writing Paper Company, pref.	32	33
International Paper Company, com.	58 1/4	59
International Paper Company, pref., stamped.	75	75 1/2
Union Bag & Paper Corporation.	69	71

Paper

F. o. b. Mill.

Ledgers	10.50	@ 30.00
Bonds	8.50	@ 55.00
Writings		
Extra Superfine	14	@ 25
Superfine	13	@ 20
Tub Sized	10	@ 16
Engine Sized	9.00	@ 15.00
News—f. o. b. Mill—		
Rolls, contract	3.75	@ 4.00
Rolls, transit	4.00	@ —
Sheets	4.00	@ —
Side Runs	3.25	@ 3.50
Book, Cased—f. o. b. Mill		
S. & S. C.	7.50	@ 9.00
M. F.	6.00	@ 7.50
Coated and Enamel	8.75	@ 15.00
Lithograph	9.00	@ 11.00

Issues—f. o. b. Mill		
White, No. 1		
Colored		
Anti-Tarnish		
Silver Tissue		
Manila		
Kraft—f. o. b. Mill—		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	5.50	@ 6.25
Imported	6.00	@ 6.25
Screenings	2.75	@ 3.50

Manila—		
No. 1 Jute	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.50	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75
Fiber Paper—		
No. 1 Fiber	6.00	@ 6.25
No. 2 Fiber	5.00	@ 5.25
Common Bogus	2.15	@ 2.50
Card Middles	4.00	@ 5.00

Boards—per ton—		
News		
Straw		
Chip		
Binders' Board		
Sgl. Mla. L.Chip		
Wood Pulp		
Container		

Wax Paper—		
Self Sealing White		
28 and 30 lb.		
basis	10.00	@ 11.00
Waxed Tissue	1.40	@ 1.60
Glassine—		
Bleached, basis 25		
lbs.	12.75	@ 13.25
Bleached, basis 20		
lbs.	13.75	@ 15.25

Mechanical Pulp

(Ex-Dock.)

No. 1 Imported	36.00	@ 38.00
No. 1 Domestic	28.00	@ 34.00
(F. o. b. Pulp Mills.)		

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.30	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
No. 2 Strong unbleached	2.25	@ 2.50
No. 1 Kraft	2.40	@ 2.80
Sulphate—		
Bleached	3.90	@ 4.00
(F. o. b. Pulp Mill.)		
Sulphite (Domestic)—		
Bleached	4.00	@ 4.50
Strong unbleached	2.60	@ 2.80
Easy Bleaching		
Sulphite	2.70	@ 3.10
News Sulphite	2.50	@ 2.80
Mitscherlich	2.75	@ 3.05
Kraft (Domestic)	2.50	@ 3.00
Soda Bleached	3.75	@ 4.00

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 2	5.75	@ 6.25
New White, No. 2	5.50	@ 6.50
Silesias, No. 1	6.25	@ 6.75
New Unbleached	9.00	@ 9.50
Washables	4.00	@ 4.25
Fancy	5.00	@ 5.50
Cotton—according to Grades—		
Blue Overall	6.00	@ 6.25
New Blue	4.75	@ 5.00
New Black Soft	5.50	@ 6.00
New Light Sec-		
onds	2.75	@ 3.00
O. D. Khaki Cut-		
tings	3.75	@ 4.25
Men's Corduroy	2.75	@ 3.00
New Canvas	7.00	@ 7.25
New Black Mixed	2.50	@ 2.75

White, No. 1—		
Repacked	6.50	@ 6.75
Miscellaneous	5.50	@ 6.00
White, No. 2—		
Repacked	3.00	@ 3.25
Miscellaneous	2.75	@ 3.00
St. Soiled White	1.40	@ 1.50
Thirds and Blues—		
Repacked	1.60	@ 1.75
Miscellaneous	1.45	@ 1.55
Black stockings	2.90	@ 3.15
Rooting Rags—		
Cloth Strippings	1.25	@ 1.30
No. 1	1.25	@ 1.30
No. 2	1.20	@ 1.25
No. 3	.85	@ .90
No. 4	.85	@ .90
No. 5A	1.00	nominal

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbleached Cottons	7.50	nominal
New White Cut-		
tings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cut-		
tings	2.00	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	9.00	@ 11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light		
Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cot-		
tons	1.50	nominal
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.10	@ 1.15
Shoppery	1.00	@ 1.05
French Blues	2.00	nominal

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.00	@ 1.10
Domestic	1.00	@ 1.10
Wool, Tares, light	1.15	@ 1.25
Wool, Tares, heavy	1.25	@ 1.40
Bright Bagging	1.10	@ 1.25
No. 1 Scrap	1.00	@ 1.15
Sound Bagging	.85	@ .95
Manila Rope—		
Foreign	5.75	@ 6.25
Domestic	6.25	@ 6.50
New Bu. Cut.	2.00	@ 2.15
Hessian Jute Threads—		
Foreign	2.25	@ 2.50
Domestic	2.20	@ 2.40
Mixed Strings	.90	@ 1.00

Twines

Cotton—(F. o. b. Mill)		
No. 1	.35	@ .37
No. 2	.31	@ .33
No. 3	.27	@ .29

India, No. 6 basis—		
Light	.20	@ .21
Dark	.19	@ .20
B. C., 18 Basis	.41	@ .42
A. B. Italian, 18		
Basis	.51	@ .61
Finished Jute—		
Light, 18 basis	.26	@ .27
Dark, 18 basis	.27	@ .29
Jute Wrapping, 3-6		
Ply—		
No. 1	.23	@ .24
No. 2	.21	@ .22
Tube Rope—		
4-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India—		
Basis	.16	@ .17
Paper Makers Twine		
Balls	.13	@ .15
Box Twine, 2-3 ply	.17	@ .18
Jute Rope	.20	@ .22
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.90	@ 4.15
Hard, White, No. 2	3.50	@ 3.70
Soft, White, No. 1	3.50	@ 3.65
Flat Stock—		
Stitchless	2.00	@ 2.15
Over Issue Mag.	2.00	@ 2.15
Solid Flat Book	1.85	@ 1.90
Crumpled No. 1	1.45	@ 1.50
Solid Book Ledger	2.25	@ 2.50
Ledger Stock	1.90	@ 2.00
New B. B. Chips	.65	@ .70
Manilas—		
New Fnv. Cut.	2.50	@ 2.75
New Cut No. 1	1.75	@ 2.00
Extra No. 1, Old	1.55	@ 1.65
Print	1.00	@ 1.05
Container Board	.75	@ .80
Bogus Wrapper	.65	@ .75
Old Krafts, machine compressed		
Bales	1.80	@ 1.90
News—		
No. 1 White News	1.75	@ 1.85
Strictly Overseas	.75	@ .80
Stuntly Folded	.70	@ .75
No. 1 Mixed Paper	.62 1/2	@ .67 1/2
Common Paper	.40	@ .45

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper		
F. o. b. Mill		
All Rag Bond	35	@ 40
No. 1 Rag Bond	30	@ 35
No. 2 Rag Bond	18	@ 20
Water Marked Sul-		
phite	10	@ 14
Sulphite Bond	9	@ 12
Sulphite Ledger	12	@ 13
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 22
No. 2 Fine Writing	12	@ 20
No. 3 Fine Writing	8	@ 12
No. 1 M. F. Book	6 1/2	@ 7
No. 1 S. & S. C.		
Book	6 1/2	@ 7 1/2
Coated Book	8 1/2	@ 10 1/2
Coated Label	8 1/2	@ 10 1/2
News—Rolls, mill	3 1/2	@ 4 1/2
News—Sheets, mill	3 1/2	@ 4 1/2
No. 1 Manila	5 1/2	@ 6
No. 1 Fiber	5	@ 5 1/2
No. 2 Manila	4 1/2	@ 5
Butchers' Manila	4	@ —
No. 1 Kraft	7	@ 7 1/2
No. 2 Kraft	6	@ 6 1/2
Wood Tag Boards	4	@ —
Screenings	2 1/2	@ —
Boards, per ton—		
Plain Chip	50.00	@ 55.00
Solid News	50.00	@ 55.00
Manila Lined		
Chip	65.00	@ —
Container Line—		
85 Test	75.00	@ 80.00
100 Test	60.00	@ 65.00

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper		
Bonds	.10	@ .60
Ledgers	.15	@ .40
Writings—		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F.	.06	@ .09
Book, S. S. & C.	.08	@ .13
Book, Coated	.08	@ .13
Coated Lithograph	.10	@ .15
Label	.08	@ .13
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul.	.08	@ .08 1/2
Manila No. 2	.07 1/2	@ .08
No. 2 Kraft	—	@ .08 1/2
No. 1 Kraft	—	@ .09 1/2
Common Bogus	.02 1/2	@ .03
Straw Board	35.00	@ 45.00
News Board	32.50	@ 35.00
Chip Board	27.50	@ 32.00
Wood Pulp Board	90.00	@ 100.00
(Carload Lots)		
Binder Boards—		
Per ton	\$65.00	@ 75.00
Carload lots	60.00	@ 65.00
Tarred Felts—		
Regular	48.00	@ 50.00
Slaters	54.00	@ 56.00

Best Tarred, 1-ply	1.35	@ 1.90
(per roll)		
Best Tarred, 2-ply		
(per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.		
Gunny No. 1—		
Foreign	.75	@ —
Domestic	.70	@ —
Manila Rope	4.00	@ 4.50
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Bur-		
lap	.75	@ .80
New Burlap Cut-		
tings	1.75	@ 2.10

Old Papers

F. o. b. Phila.		
Shavings—		
No. 1, Hard	4.00	@ 4.25
No. 2, Hard		
White	3.50	@ 3.75
No. 1 Soft White	3.35	@ 3.50
No. 2 Soft White	2.00	@ 2.25
No. 1 Mixed	1.50	@ 1.75
No. 2 Mixed	1.00	@ 1.25

(Continued on page 62)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING AUGUST 19, 1922

SUMMARY

News print	396 rolls
Printing paper	5 cs.
Cigarette paper	150 cs.
Wall paper	2,080 rolls, 66 cs., 7 bla.
Hangings	29 bla., 11 cs.
Drawing paper	4 cs.
Filter paper	62 cs., 12 bla., 4 cs.
Writing paper	3 cs.
Photo paper	15 cs.
Tinfoil paper	23 cs.
Parchment paper	12 cs., 2 rolls
Surface coated paper	3 cs.
Miscellaneous paper	41 cs., 4,581 rolls, 3,052 bla.

CIGARETTE PAPER

Rose & Frank, Lafayette, Havre, 34 cs.
 Rose & Frank, Paris, Havre, 26 cs.
 De Maudint Paper Corporation, McKeesport, Havre, 82 cs.
 Knauth, Nachod & Kuhne, President Wilson, Trieste, 2 cs.
 British American Tobacco Company, Celtic, Liverpool, 6 cs.

WALL PAPER

W. H. S. Lloyd & Co., Celtic, Liverpool, 1 cs.
 W. H. S. Lloyd & Co., Urbana, London, 7 cs.
 W. H. S. Lloyd & Co., Lapland, Antwerp, 2 cs.
 F. G. Prager & Co., by same, 2,089 rolls.
 M. J. Corbett Company, Vauban, Hamburg, 5 cs.
 A. Murphy & Co., Aquitania, Liverpool, 2 bla.
 A. Murphy & Co., Wurtemberg, Hamburg, 5 bla., 2 cs.
 A. C. Irdman, Jr., Homeric, Southampton, 1 cs.
 R. F. Downing & Co., Durban Maru, Kobe, 48 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Missouri, London, 29 bla., 11 cs.

DRAWING PAPER

H. Reeve-Angel & Co., Missouri, London, 4 cs.

FILTER PAPER

H. Reeve-Angel & Co., Missouri, London, 11 cs.
 E. Fougere & Co., Homeric, Southampton, 51 cs.
 J. Manheimer, Paris, Havre, 13 bla.
 H. Reeve-Angel & Co., Aquitania, Liverpool, 4 cs.

WRITING PAPER

H. Reeve-Angel & Co., Aquitania, Liverpool, 3 cs.

PHOTO PAPER

J. J. Ganin, Aquitania, Liverpool, 1 cs.
 Gevaert Company of America, Lapland, Antwerp, 12 cs.
 Eastman Kodak Company, Missouri, London, 2 cs.

TINFOIL PAPER

Enoch Morgan & Sons, Celtic, Liverpool, 23 cs.

PRINTING PAPER

B. F. Drakenfeld & Co., Celtic, Liverpool, 5 cs.

NEWS PRINT

M. Gottesman & Co., Inc., Drottningholm, Gothenburg, 396 rolls.

PARCHMENT PAPER

F. C. Stripe, Lapland, Antwerp, 14 cs., 2 rolls.

SURFACE COATED PAPER

Gevaert Company of America, Lapland, Antwerp, 3 cs.

PAPER

U. S. Forwarding Company, Rotterdam, Rotterdam, 7 cs.
 H. Reeve-Angel & Co., Verbania, London, 10 cs.
 Bank of America, President Fillmore, Bremen, 733 rolls.
 Bendix Paper Company, Vauban, Hamburg, 10 cs.
 Republic Bag & Paper Company, Western Scout, Hamburg, 2,056 rolls.
 Japan Paper Company, Oregonian, Hamburg, 7 bla.

New York Tribune, Yorek, Bremen, 210 rolls.
 Virginia Paper Company, by same, 487 bla.
 H. Reeve-Angel & Co., by same, 8 bla.
 Parsons & Whittemore, by same, 2,017 bla., 111 rolls.
 Bird Board & Lining Company, by same, 143 rolls.
 A. Murphy & Co., Lafayette, Havre, 2 cs.
 Irving National Bank, United States, Copenhagen, 349 bla.
 J. P. Heffernan Paper Company, by same, 56 bla.
 M. M. Cohen, by same, 125 bla., 34 rolls.
 F. C. Strype, by same, 3 bla.
 E. C. Melbyn, by same, 117 rolls.
 Equitable Trust Company, by same, 1,187 rolls.
 P. H. Petry & Co., Wurtemberg, Hamburg, 12 cs.

RAGS, BAGGING, ETC.

E. J. Keller Company, Inc., Columbia, Glasgow, 51 bla. flax waste.
 E. J. Keller Company, Inc., United States, Copenhagen, 576 bla. rags.
 Katzenstein & Keene, Inc., Ville de Djiboute, Marseilles, 1,299 bla. paper stock.
 Katzenstein & Keene, Inc., Lafayette, Havre, 41 bla. rags.
 American Express Company, by same, 11 bla. rags.
 Castle, Gotthel & Overton, Lafayette, Havre, 31 bla. rags.
 Irving National Bank, Western Scout, Hamburg, 44 bla. rags.
 Garfield National Bank, by same, 61 bla. rags.
 Goldman, Sachs & Co., by same, 135 bla. rags.
 Ladenburg, Thalman & Co., by same, 62 bla. rags.
 E. J. Keller Company, Inc., by same, 347 bla. rags.
 Castle, Gotthel & Overton, Persici, Havre, 267 bla. rags.
 J. M. Hicks, Inc., Missouri, London, 44 bla. waste paper.
 Albion Trading Company, by same, 66 bla. rags.
 Equitable Trust Company, Wurtemberg, Hamburg, 202 bla. rags.
 Castle, Gotthel & Overton, Lafayette, Havre, burg, 115 bla. new cuttings.
 E. J. Keller Company, Inc., by same, 16 bla. linen rags, 47 bla. woolen rags.
 E. J. Keller Company, Inc., Seydlitz, Bremen, 683 bla. rags.
 Irving National Bank, by same, 107 bla. rags.
 Chemical National Bank, by same, 216 bla. rags.
 F. P. Gaskell, by same, 59 bla. rags.
 American Wood Pulp Corporation, by same, 111 bla. rags.
 J. Spunt & Co., Balton Castle, Shanghai, 141 bla. cotton waste.
 W. Barnet Sons, Paris, Havre, 257 bla. rags.
 D. M. Hicks, by same, 298 bla. rags.
 Equitable Trust Company, Phoebe, Marseilles, 896 bla. rags.
 Basch & Greenfield Company, Celtic, Liverpool, 5 bla. rags.
 Albion Trading Company, by same, 12 bla. rags.
 R. F. Downing & Co., Verbania, London, 157 bla. paper stock.
 Equitable Trust Company, President Fillmore, Bremen, 121 bla. rags.
 Chemical National Bank, by same, 634 bla. rags.

OLD ROPE

Brown Brothers & Co., Phoebe, Genna, 85 coils.
 International Purchasing Company, Paris, Havre, 33 coils.
 Brown Brothers & Co., United States, Copenhagen, 50 coils, 27 bla.
 E. J. Keller Company, Inc., by same, 141 coils.

CASEIN

A. Klipstein & Co., Russillon, Havre, 100 bags.
 A. Klipstein & Co., Missouri, London, 300 bags.
 T. M. Duché & Sons, Boswell, Buenos Aires, 834 bags.
 Atterbury Brothers, Inc., Western World, Buenos Aires, 334 bags.

Kalbfleisch Corporation, Crofton Hall, Buenos Aires, 834 bags.

WOOD PULP

Tidewater Papermills Company, Barnholm, Port Hastings, 6,910 bla.

WOODFLOTT

The Hansa Company, Vauban, Hamburg, 228 bags.

A. Kramer & Co., Inc., by same, 446 bags.

PHILADELPHIA IMPORTS

WEEK ENDING AUGUST 19, 1922

E. J. Keller Company, Inc., Oregonian, Hamburg, 291 bla. rags.
 E. J. Keller Company, Inc., Ninian, Antwerp, 982 bla. rags.
 E. J. Keller Company, Inc., Anaconda, Rotterdam, 288 bla. rags.
 E. J. Keller Company, Inc., Sonora, Havre, 90 bla. rags.
 E. J. Keller Company, Inc., Sonora, Bordeaux, 280 bla. rags.
 E. J. Keller Company, Inc., Hudson, Rouen, 314 bla. rags.
 E. J. Keller Company, Inc., Hudson, Havre, 1,068 bla. rags.
 E. J. Keller Company, Inc., Hudson, Nantes, 914 bla. rags.
 F. J. Keller Company, Inc., Hudson, Havre, 113 bla. bagging.
 E. J. Keller Company, Hudson, Bordeaux, 2,020 bla. rags.
 E. J. Keller Company, Inc., Breedyk, Rotterdam, 138 bla. rags.
 Katzenstein & Keene, Inc., Stormking, Antwerp, 776 bla. rags.
 Irving National Bank, Western Scout, Hamburg, 68 bla. rags.
 Mechanics & Metals National Bank, by same, 540 bla. rags.
 L. H. Abenheimer, by same, 73 bla. rags.
 Corn Exchange National Bank, by same, 274 bla. rags.
 Coal & Iron National Bank, by same, 373 bla. rags.
 Castle, Gotthel & Overton, Breedyk, Rotterdam, 795 bla. rags.
 Castle, Gotthel & Overton, Hudson, Bordeaux, 369 bla. rags.
 Castle, Gotthel & Overton, Stormking, Antwerp, 10 bla. rags.
 Castle, Gotthel & Overton, Graciana, Middlebrough, 264 bla. rags.

BOSTON IMPORTS

WEEK ENDING AUGUST 19, 1922

Shawmut National Bank, Missouri, London, 347 reels news print.
 Castle, Gotthel & Overton, Breedyk, Rotterdam, 255 bla. rags.

BALTIMORE IMPORTS

WEEK ENDING AUGUST 19, 1922

E. J. Keller Company, Inc., Mississippi, Antwerp, 544 bla. rags.
 M. Gottesman & Co., Inc., Mexican, Christiania, 1,500 bla. wood pulp.

CHARLESTON IMPORTS

WEEK ENDING AUGUST 19, 1922

E. J. Keller Company, Inc., Magmeric, Hamburg, 346 bla. bagging.

TAYLOR, BATES & CO.

*Members New York Stock Exchange
Members New York Cotton Exchange*

100 Broadway, New York

Tel. Rector 1140



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COTTON**

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of Frovifors excellent
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Scandinavian Paper Mills' representatives

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Tel. Beekman 5891

LOGS FOR SALE

The Royal Trust Company, Montreal, Authorized Trustee for the properties of Great Eastern Paper Company, Limited, Authorized Assignor, offers subject to prior sale:

Spruce logs about 5,000,000 ft. B.M.
Balsam logs about 5,000,000 ft. B.M.
Cedar logs about 4,000,000 ft. B.M.

These logs are in, or on the banks of, the Madeleine River, Gaspé County, Quebec, and are offered for sale as they lie, but the purchaser would have the use (on terms to be arranged) of such of the Company's plant as is necessary for handling the wood. All facilities will be given for the inspection of the wood and of the opportunities for its removal. The Vendor expressly stipulates that intending purchasers must satisfy themselves, and that the sale is not being made on the Vendor's representations in any way. Address Tenders to The Royal Trust Company, Montreal.

MONTREAL, July, 1922. CANADA

Whalen Sulphite Pulps

Made from the SITKA SPRUCE of BRITISH COLUMBIA. Noted for Fibre, Color and strength.

**SNOWHITE
BLEACHED
GLACIER**

**EASY BLEACHING
SWAN
STRONG**

As exclusive selling agents for the Whalen Pulp & Paper Mills, Ltd., we solicit your inquiries to any of our offices.

Canadian Robert Dollar Co.

LIMITED

VANCOUVER, B. C.

U. S. ADDRESSES

Robert Dollar Co., Robert Dollar Bldg., San Francisco
Robert Dollar Co., 15 Moore Street, New York, N. Y.
Robert Dollar Co., Harris Trust Bldg., Chicago, Ill.
Robert Dollar Co., L. C. Smith Bldg., Seattle, Wash.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, AUGUST 22, 1922.

BLEACHING POWDER.—While the excessive demand for bleach continues unabated, producers are reported to be sold out for several months in advance and scarcely any of the commodity may be obtained on the market. The nominal price of \$1.60 per cwt. still holds and each succeeding week manufacturers' stocks of raw materials is diminishing. Considerably higher prices are predicted for the near future.

BLANC FIXE.—With a decided firming tendency, the blanc fixe market has exhibited a stronger tone in recent weeks. Dry blanc fixe is still being quoted at \$75 to \$85 per ton while prices on the pulp run between \$40 and \$50.

CASEIN.—The hectic condition of this market has caused any and all quoted prices to be regarded as decidedly nominal and almost inevitably subject to change within the week. Twenty cent casein is the order of the day and consumers with low stocks appear to be glad to get the commodity at this figure. Producers are reported to be selling casein for 1923 shipment at 14 and 15 cents a pound and available stocks of the Argentine product are so small as to be almost negligible.

CAUSTIC SODA.—Caustic is easy at 3.10 to 3.25 cents a pound, contract, on a 60 per cent basis. Spot prices at the plant average 2.50 cents.

CHINA CLAY.—A sharp advance in prices in the China Clay market is generally expected if English producers continue to have difficulty in transporting enough of the commodity to meet the heavy demand in this country. Domestic clays are selling well at \$7 to \$10 per ton for the washed grades and \$5.50 to \$8 for the unwashed while some stiffening has already been noted in the quotations of \$14 to \$22 for imported China clay.

LIQUID CHLORINE.—A slightly better tone appears to have crept into the chlorine market during the past week, due, probably to the proximity of the fall months. Prices, however, still cover the wide scope of 4.00 to 7.00 cents a pound, depending largely upon the container.

ROSIN.—The New York price on rosin still holds at \$6.20 a barrel of 280 pounds for the paper makers' grades, E, F, and G. This price is generally regarded as firm, quotations f. o. b. Savannah, Ga., being in the neighborhood of \$5.20.

SALTCAKE.—Selling around \$22.00 per ton and better, chrome cake continues to stiffen in price. Both pulp and glass producers are now competing actively in the saltcake market with the result that available supplies have been wiped out and muriatic acid manufacturers are forced to waste thousands of gallons of the commodity to keep anywhere near even with the demand for the by-product. Acid cake is listed nominally at \$25.00 a ton.

SATIN WHITE.—Showing a slightly better tone each week, this whitening agent is still quoted at 1.50 to 2.00 cents a pound. Chemical dealers are inclined to believe the demand will increase materially within a few weeks.

SODA ASH.—The quotations on soda ash have not varied from the price schedule for the year 1.51 cents a pound, contract. Transportation difficulties and a lack of fuel is beginning to handicap producers and retard contract withdrawals.

SULPHUR.—There are no indications that brimstone will vary either in price or demand for some time to come. The production field being controlled by so few companies, cut-throat competition is practically eliminated and quotations hold steady at \$18 to \$20 per ton, month in and month out.

SULPHATE OF ALUMINA.—With iron free sulphate quoted at \$2.25 and more per hundred pounds and the commercial grade at \$1.40, works, in bags, manufacturers in the west are practically shut out of the market. Many of their plants have been closed down due to lack of fuel and prospects are that prices will soar in the near future.

Market Quotations

(Continued from page 59)

Solid Ledger Stock. 2.25 @ 2.50	New Black Soft. .03 @ .03 1/4
Writing Paper. 1.80 @ 2.00	New Light Sec. .02 @ .02 1/4
No. 1 Books, heavy. 1.60 @ 1.75	Khaki Cuttings. .02 1/4 @ .02 1/4
No. 2 Books, light. 1.40 @ 1.50	Corduroy. .02 @ .02 1/4
No. 1 New Manila. 2.75 @ 3.00	New Canvas. .07 @ .07 1/4
No. 1 Old Manila. 1.50 @ 1.75	New Black Mixed. 2.75 @ 3.00
Container Manila. 1.15 @ 1.20	
Old Kraft. 2.00 @ 2.25	
Overissue News. .85 @ .90	
Old Newspaper. .70 @ .75	
No. 1 Mixed Paper. .70 @ .75	
Common Paper. .40 @ .50	
Straw Board Chip. .55 @ .60	
Binders Bd. Chip. .55 @ .60	
Domestic Rags—New.	
Price to Mill, f. o. b. Phila.	
Shirt Cuttings. .10 @ .10 1/4	
New White, No. 1. .05 1/4 @ .06 1/4	
New White, No. 2. .05 1/4 @ .06 1/4	
Silesias, No. 1. .06 1/4 @ .06	
New unbleached. .09 @ .09 1/4	
Washables. .03 1/4 @ .03 1/4	
Fancy. .04 1/4 @ .04 1/4	
Cottons—according to grades—	
Blue Overall. .04 1/4 @ .05 1/4	
New Blue. .02 @ .02 1/4	
	White, No. 1—
	Repacked. .06 @ .06 1/4
	Miscellaneous. .04 1/4 @ .04 1/4
	White, No. 2—
	Repacked. .03 @ .03 1/4
	Miscellaneous. .02 1/4 @ .02 1/4
	Thirds and Blues—
	Repacked. .165 @ .180
	Miscellaneous. .140 @ .155
	Black Stockings. .175 @ .225
	Roofing Stock—
	No. 1. .100 @ .110
	No. 2. .90 @ .100
	No. 3. .80 @ .90
	No. 4. .80 @ .90
	No. 5A. nominal
	B. nominal
	C. nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper	
Bonds. .06 1/4 @ .65	Wood, Vat Lined. .47.25 @
Ledgers. .07 1/4 @ .55	Filled News Board. .45.00 @
Writings. .07 1/4 @ .22 1/4	Solid News Board. .42.00 @
Superfine. .15 @ .22 1/4	S. Manila Chip. .32.50 @
Pine. .15 @ .18	Pat Coated. .70.00 @
Books, S. & S. C. .07 @ .10	
Books, M. F. .05 1/4 @ .07 1/4	
Books, coated. .08 @ .10	
Label. .08 1/4 @ .09 1/4	
News, sheets. .40 @ .42 1/2	
News, rolls. .40 @ .42 1/2	
Manila—	
No. 1 Manila. \$5.50 @ 7.00	
No. 1 Fibre. .07 1/4 @ —	
No. 1 Jute. 10.50 @ 12.00	
Kraft Wrapping. .06 1/4 @ .07	
Common Bogus. 3.00 @ —	

Boards

(Per Ton Destination)	
Chip. .550 00 @ 55.00	
News, Vat Lined. .36.50 @ 38.50	

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Sulphite, bleached. .80.00 @ 90.00	
Sulphate. .70.00 @ —	

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—

White Env. Cut. .3.75 @ —

Soft White Book. .3.40 @ 3.40

Shavings. .1.70 @ —

White Blk News. .1.70 @ —

Book and Ledger. .1.70 @ —

Flat Magazine and. .1.70 @ —

Book Stock (old). .1.70 @ —

Light and Crum. .1.55 @ —

pled Book Stock. .1.55 @ —

Ledgers and Writ. .1.95 @ —

ings. .1.95 @ —

Solid Ledgers. .1.95 @ —

Manila—

New Manila Cut. 1.70 @ 1.80

Printed Manila. .90 @ 1.00

Kraft. 2.25 @ —

News and Scrap. .90 @ —

Strictly Overissue. .80 @ —

Folded News. .80 @ —

No. 1 Mixed Pa. .70 @ —

pers. .70 @ —

Domestic Rags—

Price to mills, f. o. b. Toronto.

Per lb.

No. 1 White shirt. .11 @ .11 1/4

cuttings. .06 1/4 @ —

No. 2 White shirt. .06 1/4 @ —

cuttings. .06 1/4 @ —

Fancy shirt. .06 1/4 @ —

cuttings. .06 1/4 @ —

No. 1 Old whites. .04 @ .04 1/4

Thirds and blues. .02 @ .02 1/4

Per cwt.

Black stockings. 2.00 @ 2.25

Roofing stock:

No. 1. .11 @ —

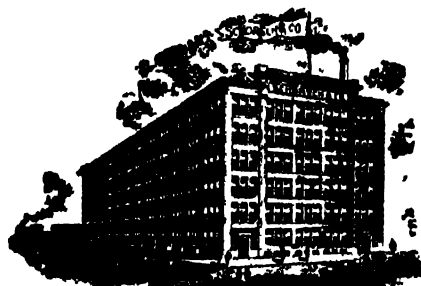
No. 2. .12 @ —

Roofing stock:

Manila rope. .06 @ .06 1/4

No. 2. .01 1/4 @ —

Gunny bagging. 1.00 @ 1.25

The Home of QualityFACTORY
132ND TO 133RD ST & BROOK AVE

PAPER BAGS

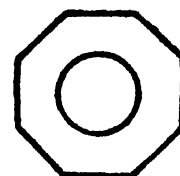
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Manufacturers

500 East 133d Street : New York

This Registered Trade
Mark Octagonon a Paper
Bag Vouches for
Its Good Quality

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MANUFACTURERS OF
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WAXED PAPERS
SURFACE AND DRY WAXING804-806-808 Sansom Street
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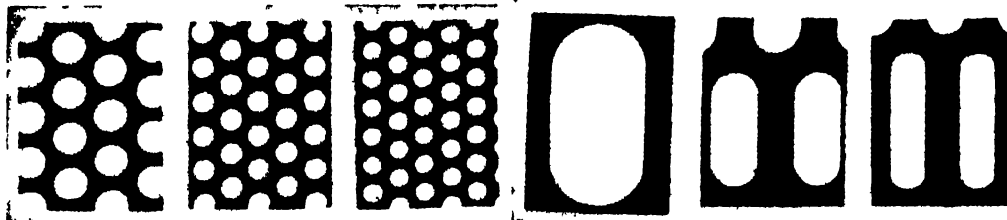
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HIGH GRADE
SULPHITE
WRAPPING
PAPERS

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300 Tons dailySatisfactory deliveries of the *clay*
you prefer at prices you will con-
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FOR AMERICAN TRADE110 William Street
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PERFORATED METALS

*All sizes
and
shapes
of Holes**All kinds
and
thicknesses
of Metal*

FOR CENTRIFUGAL AND ROTARY SCREENS, DRAINER BOTTOMS, FILTER PLATES, PULP WASHERS, ETC.

The Harrington & King Perforating Company

618 No. Union Ave., Chicago, Ill., U. S. A.

New York Office, 114 Liberty St.

WANT AND FOR SALE ADVERTISEMENTS

HELP WANTED

WANTED—Two first class (sober) machine tenders on Chipboard. Two tours. State age, reference and salary wanted. Address, Box 5346, care Paper Trade Journal. A-24

PLANT SUPERINTENDENT—Experienced wanted for plant in New York City. Preferably with knowledge of Ruling Cutter and Stitching Machines accustomed to supervising manufacture of Paper Note Books, Pads, etc. All correspondence will be treated confidential. Reply giving full details outlining past experience, age, salary required, etc. Address, Box 58, 2501 World Tower Building, New York City. A-24

MILLWRIGHT WANTED in one machine mill in Middle West. Good job for the right man. Good wages, good town to live in. Address, Box 5348, care Paper Trade Journal. A-24

WANTED—First class Machine Tender, also two first class Millwrights for Continental Board Mill. Permanent position for right parties. Good working conditions. No labor troubles. Reply fully stating experience, salary expected and references. Address, Box 5349, care Paper Trade Journal. A-24

EXECUTIVE WANTED as General Manager for a two machine mill making book and bond paper. Must be a practical paper maker and must have had successful experience in a similar position. This is a good, permanent position for a high grade man. Address, reply to Box 5350, care Paper Trade Journal. A-31

FOREMAN—Assistant for Toilet Paper Converting Plant at Ballston Spa, N. Y. One who has had actual experience operating machine and is capable of adjusting and setting the machines and train new operators. Must know how to handle help and get production. Apply, stating salary, length of experience, age, married or single, references, strictly confidential, write to Mr. Lampo, c/o Universal Crepe & Tissue Mills, Main office, 117 East 18th St., New York City. A-24

WANTED:

Salesman familiar with book and kraft papers. Excellent opportunity, state experience. Communications strictly confidential. Address Box 5358, care Paper Trade Journal.

A-24

TWINE MANAGER WANTED

We have an excellent opportunity for young man with education and ability who has thorough knowledge of twine and cordage business. Liberal salary to one capable of handling salesmen and increasing sales of an already large and prosperous business. Replies strictly confidential. Address Box 5341, care Paper Trade Journal. A-24

HELP WANTED

WANTED—Envelope adjuster who is competent in taking full charge of one Rotary and six Plunger Type Machines. Plant located on Pacific Coast. Good opportunity. Steady position. In application, give experience, age and salary expected. Address, Box 5347, care Paper Trade Journal. A-24

WANTED—Machine Tender on slow running fourdrinier machine making specialties. Two tour run. Give age, references, etc. Address, Box 5351, care Paper Trade Journal. A-31

SALESMEN—Calling on the jobbing paper trade, to carry our line of special brand pencils, as a side line. Write for full particulars. Peerless Pencil Co., Louisville, Ky. A-21

WANTED—Machine Tender on Straw Corrugating, eight hour shifts. Address, The Thompson & Norris Co., Brookville, Indiana. A-31

WANTED—First class reliable Beaterman on Book Papers. Steady work, eight hours, 55 cents per hour. Address, Box 5360, care Paper Trade Journal. A-24

WANTED—Beaterman for Container Board Mill. Two tours. Good wages. Address, Box 5335, care Paper Trade Journal. A-24

WANTED—Experienced Machine Tender for a two cylinder sixty inch machine making rope and kraft. Good steady mill. Address, Superintendent, Tarentum Paper Mills, Tarentum, Pa. A-24

WANTED—By Import and Domestic Paper Jobbers, located in Toronto, agencies for high grade paper products. Address, Box 5278, care Paper Trade Journal. A-24

WANTED: Chief engineer to take charge of Boiler House, Steam Engines, and all Electrical Maintenance in a paper mill. Address, Box 5317, care Paper Trade Journal. A-24

WANTED: Good, sober, steady machine tender for Container Board Mill. Two tours. Good wages. Address, Box 5332, care Paper Trade Journal. A-24

FOREMAN WANTED to take charge of Dinking Plant. Please state qualifications in first letter, salary desired, etc. Married man preferred. Address, Box 5334, care Paper Trade Journal. A-24

SITUATIONS WANTED

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. A-24

SITUATIONS WANTED

GRADUATE MECHANICAL ENGINEER: 24 years old, married. 3½ years in Drafting Room. 1 year estimating engineer on all repairs, new building and machine additions. At present employed. Would like a position as assistant to Mechanical Superintendent or as Engineer on erection job. Address, Box 5320, care Paper Trade Journal. A-24

POSITION WANTED—Sulphite Superintendent who is technical, practical and experienced producer of high grade bleached and unbleached pulps, using both quick and slow cook methods, desires position. Present employer must be given 30 days' notice. Address, Box 5337, care Paper Trade Journal. A-31

SITUATION WANTED—Experienced paper mill cost and general accountant, office manager, college education, capable installing costs with actual experience paper making. Best references. Salary secondary to advancement. Address, Box 5339, care Paper Trade Journal. A-24

SUPERINTENDENT—Twenty-five years' experience. Open for employment. Up-to-date all grades boards and cylinder papers. Good executive. Address, Box 5340, care Paper Trade Journal. A-31

SUPERINTENDENT open for position. Eighteen years' experience on bonds, ledgers and high grade paper. Good man on colors and can get results. Good references. Address, Box 5336, care Paper Trade Journal. A-31

WANTED POSITION as Night Superintendent or Tour Boss, will accept Machine tender, married, steady, experienced on Test, Box Board, Specialties, Roofing and Straw. Best references. Address, Box 5342, care Paper Trade Journal. A-31

POSITION as draftsman or designer desired by Civil Engineer, Swede, 30 years of age, college graduate with one year railroad engineering, surveying; one year as laborer in sulphite and paper mill; two years as assistant superintendent at construction of a sulphite mill; half a year as assistant superintendent at reconstruction of a sulphite mill; two and a half years as draftsman and designer at a sulphite and paper mill and at same time superintendent for construction of big transport system for lumber; one and a half years as draftsman at a paper mill in America. Good draftsman and estimator of general building construction, including reinforced concrete, steel and modern timber structures. At present employed. Prefer position with good opportunities either at sulphite mill or by consulting engineer. Address, Box 5343, care Paper Trade Journal. A-31.

PRACTICAL PAPER MAKER desires a position with a board or specialty mill. Having had experience in both cylinder and fourdrinier mills in all departments. Have been doing engineering work in different mills for past four years. Experienced in construction and mechanical details. Address, Box 5282, care Paper Trade Journal. A-24

WRAPPING PAPER MANUFACTURERS

Manufacturers' agent, located in New Orleans, permanently established, well and favorably known to the larger jobbers in Louisiana and Texas, desires to represent, on a commission basis, manufacturers of Wrapping Papers, No. 2 News, and both B. F. and W. F. Fibres. Address Box 5292, care Paper Trade Journal. A-24

ENGLAND

Gentleman going on business trip to London will be pleased to accept any commission to transact business for individuals or business firms.

Familiar with paper lines. American and Canadian references. Address, Box 5354, care Paper Trade Journal.

A-24

SITUATIONS WANTED

DO YOU Sometime feel the need of a man to whom you can confidently turn over the important matters of your office, such as sales, correspondence, purchasing, management of the office, inside selling and the like. I am a young man, married, with both mill and jobbing experience. Address, Box 5352, care Paper Trade Journal.

SULPHITE SUPERINTENDENT, 20 years' practical and technical training, wishes to get in communication with Managers of Mills who want the best and are not getting it. Address, Box 5353, care Paper Trade Journal. O-5

EXPERT ON COLORS—Practical paper-maker, 15 years' experience on various grades, also first class colorman with experience as demonstrator with largest color manufacturers, seeks position as assistant superintendent or in similar capacity. Address, Box 5361, care Paper Trade Journal. S-6

MAN 30, long experience in purchase of printing and paper for large corporation wishes connection with paper mill, or company in similar position where results count. Address, Box 5327, care Paper Trade Journal. A-31

MASTER MECHANIC with 12 years' paper mill experience wishes to make a change. A practical machinist and millwright, up in all Mill Repairs and not afraid of work. Best references. Address, Box 5324, care Paper Trade Journal. A-24

SALESMAN—Specialist on Coated Lithographic Papers and Boards; also Offset and Printing Papers, desires to connect with mill or dealers having mill connections. Can produce good business. Address, Box 5260, care Paper Trade Journal. A-24

YOUNG MAN: 20, ambitious, familiar with fine papers, Bristol, etc., wishes to connect with concern where good future awaits. Address, Box 5333, care Paper Trade Journal. A-24

WANTED—Position as Assistant Superintendent or Night Boss, by a man of experience on Book, Bond, Kraft and light weight papers; familiar with cylinder machines. Address, Box 5345, care Paper Trade Journal. A-31

FOR SALE

For Sale by
Flower City Tissue Mills Company
ROCHESTER, N. Y.

Generator with exciter:
Made by
Westinghouse Electric Company
Pittsburgh, Pa.

62.5K. V. A.
480 Volts
75.2 Amperes per terminal
3 Phase—25 Cycle—750 R.P.M.
Serial No. 984732.
Pumps:

Made by
Gould Pump Company
No. 2 Direct Connected motor
Single Stage—Single Suction
3" Suction—2" Discharge
Max. Capacity—120 Gal. per min.
Henry H. Worthington

1 Fan Pump
8" Suction—6" Discharge
Nash Vacuum System
Complete for

3 Mould Board Machine (New)
Steel Pulleys
40" Face—108 Dia.— $\frac{3}{4}$ " Bore
20" Face—7 $\frac{1}{2}$ " Dia.— $\frac{1}{2}$ " Bore

2 Reeves Drives Complete
No. 1—Two Belts
Size 9, Class E, Range 4 to 1
No. 2—Two Belts
Size 8, Range 3 to 1
Extra Pair Cones

2-10 Plate Packard Screens
Size of plate 12 x 42
1 Revolving Expansion Reel
81" Wide, cuts 24 x 82"

Made by
Smith and Winchester
South Windham, Conn.
2 Forge Blowers
Buffalo Forge C—4 $\frac{1}{2}$ x 5 $\frac{1}{2}$

S-6

FOR SALE

1—Bird—Flat Plate, 1 knocker tailing screen with self cleaning attachment. This machine is new and has never been set up.

1—8" Stickler, horizontal exhaust steam oil separator. Made by Open Coil Heater & Purifier Co. New.

1—Paddle Beater Spindle, iron paddle frames, lighter bars, stands, bearings, pulley complete. Iron paddle frames are 48" diameter 42" wide. Spindle is 15 feet long, 4 15/16" diameter. This equipment is new and never uncrated.

2—Nash-Hydo. Am. Compressors on cast iron base—730 R. P. M. No. 1387 Arranged for direct connection to constant speed motors.

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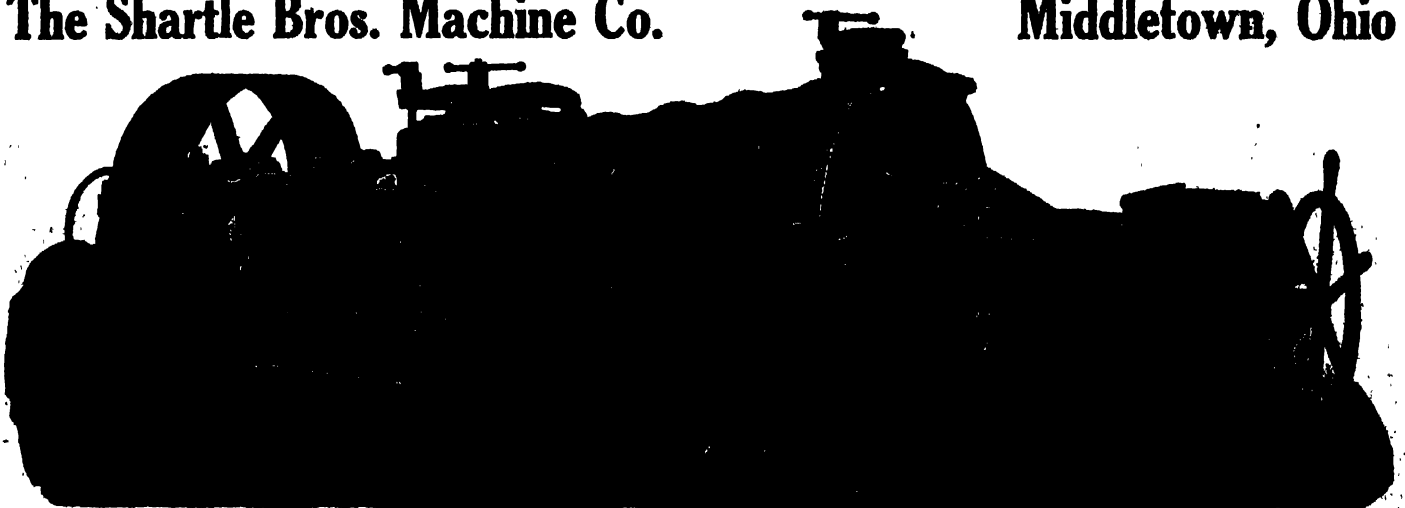
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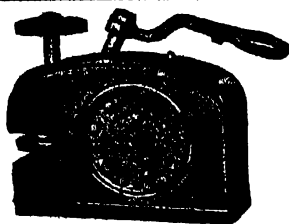
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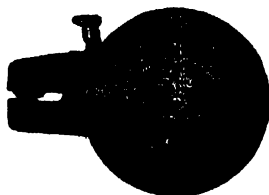
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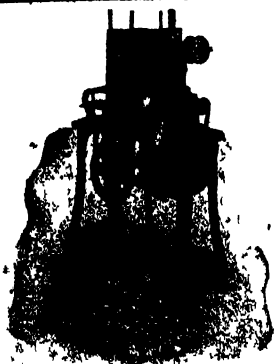
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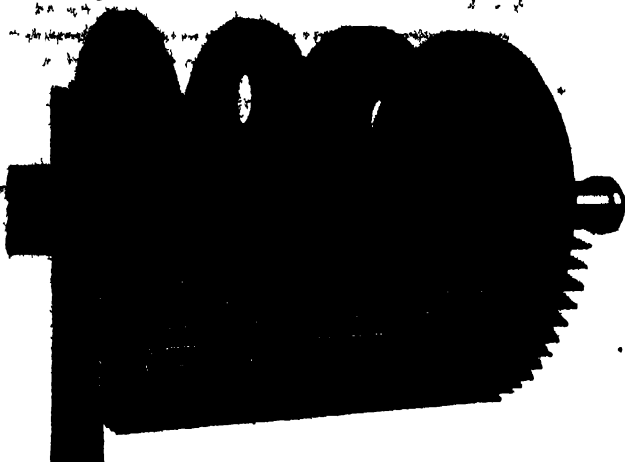
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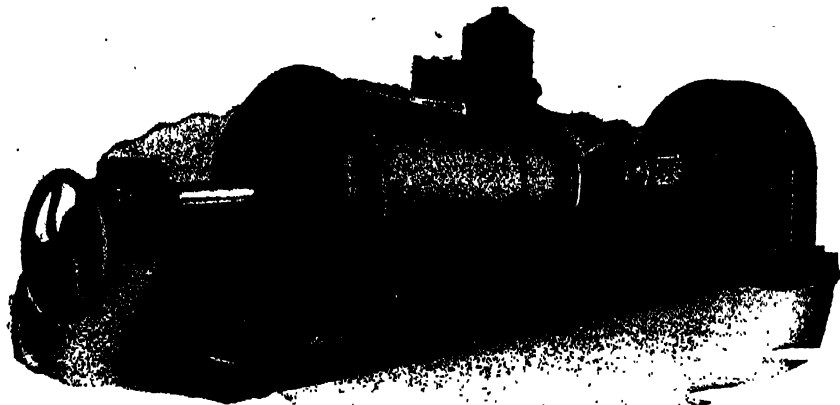
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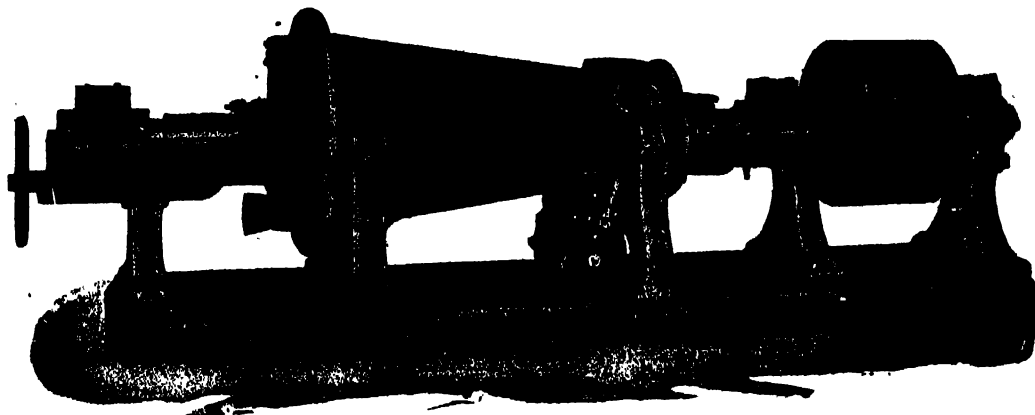
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ACID SYSTEMS.	Page		Page		Page
G. D. Jensen Company	—	Du Pont de Nemours Co., E. I.	—	Knox Woolen Company	—
ADDING MACHINE ROLLS.		Heller & Merz Co.	13	Lockport Felt Co.	—
Paper Manufacturing Co.	70	Kuttruff, Pickhardt & Co.	53	Orr Felt & Blanket Co.	—
AGALITE.		White Tar Aniline Corporation, The	4	Shuler, Benninghofen Co.	—
Union Talc Co.	69	C. K. Williams & Co.	76	Waterbury Felt Co.	—
U. S. Talc Co.	76	CHEMISTS.		Waterbury & Sons Co., H.	67
ALUM.		United States Testing Co.	68	FELT ROLLS.	
The Kalbfleisch Corp.	40	CLAY.		Rodney Hunt Machine Co.	58
Pennsylvania Salt Mfg. Co.	75	Atterbury Bros.	Front Cover	FILTERING SYSTEMS.	
Superior Chemical Co.	57	John W. Higman Co.	70	Norwood Engineering Co.	66
Winkler Bros., Inc.	75	Miner Edgar Co., The	63	FLOOR COVERINGS.	
ARCHITECTS AND ENGINEERS.		Paper Makers Chemical Co.	57	L. Sonneborn & Sons	67
George F. Drew	68	Star Clay Co.	76	FLOOR HARDENER (Concrete).	
Hardy F. Ferguson	68	Western Paper Makers' Chemical Co.	57	L. Sonneborn & Sons	67
William T. Field	68	CLUTCHES (Friction, Etc.).		FOLDING MACHINES.	
George F. Hardy	68	Hill Clutch Co.	—	Hudson-Sharp Machine Co.	—
G. D. Jensen Company	—	COGS.		FOURDRINER WIRES.	
Management Engineering and Development Co.	69	N. F. Bowsher Co.	75	Appleton Wire Works	76
F. L. Smith	68	Menasha Wood Split Pulley Co.	—	Buchanan & Bolt Wire Co.	72
Stebbins Engineering Co.	69	COMPRESSORS (Air).		Cable Excelsior Wire Mfg. Co.	76
Thomas L. Tomlins & Son	68	The Nash Engineering Co.	29	Cheney, Bigelow Wire Works	74
Vitale & Rothery	68	CONVEYORS (Pulpwood).		Eastwood Wire Mfg. Co.	75
Joseph H. Wallace & Co.	68	Jeffrey Mfg. Co.	—	Green Bay Wire Works	—
ASBESTINE PULP.		Weller Mfg. Co.	—	Lindsay Wire Weaving Co.	75
International Pulp Co.	Front Cover	CORDAGE.		Joseph O'Neil Wire Works	75
ASH-HANDLING MACHINERY.		Columbian Rope Co.	21	The W. S. Tyler Company	75
Jeffrey Mfg. Co.	—	CORES.		FURNACE (Automatic).	
BALL MILLS.		Elixman Paper Core Co.	—	Murphy Iron Works	66
The Crossley Machine Co.	40	CRANES (ELECTRIC).		GAUGES (Caliper).	
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Menasha Wood Split Pulley Co.	—	Independent Die Co., Inc.	—	INVESTMENTS.	
BEATING ENGINES.		DIGESTERS.		Taylor, Bates & Co.	61
Appleton Machine Co., The	31	American Welding Co.	12	IRON EXTRACTORS.	
Beloit Iron Works	27	Biggs Boiler Works Co.	—	Oakes Co., Roland	—
Claffin Engineering Co.	—	DRINKING CUPS.		KNIVES, ETC.	
Dayton Beater & Hoist Co.	—	F. N. Burt Company, Ltd.	33	Bolton & Son, J. W.	9
Dillon Machine Company, Inc.	71	Vortex Mfg. Co.	53	Dowd Knife Works, R. J.	—
Ditte Machine Works, Inc.	70	DRIVES.		Machinery Co. of America	—
Downingtown Mfg. Co.	74	Westinghouse Electric & Mfg. Co.	23	LUBRICANTS.	
Emerson Mfg. Co.	70	DRIVES (Gear).		Vacuum Oil Co.	—
Noble & Woods Machine Co.	71	Farral Foundry & Machine Co.	—	MICROMETERS.	
Valley Iron Works	—	DRIVES (Silent Chain).		Ashcroft Mfg. Co.	67
BEATER ENGINE BARS.		Morse Chain Co.	68	E. J. Cady Co.	—
Dowd Knife Works, R. J.	—	DYERS		Foreign Paper Mills, Inc.	3
BELTING.		Biggs Boiler Works Co.	—	MICROMETER (CALIPERS.)	
Goodyear Tire & Rubber Co.	—	DRYER EXHAUSTS.		Lohdell Car Wheel Co.	4
Republic Rubber Co.	—	The Nash Engineering Co.	29	MILL COGS.	
BOILERS.		DRYING SYSTEMS.		N. P. Bowsher & Co.	75
Heine Boiler Co.	53	Open Coil Heater & Purifier Co.	—	MOTORS.	
BRONZE CASTINGS.		W. F. Pickles	—	R. F. Perkins & Sons, Inc.	11
Hyde Windlass Co.	13	Ross Engineering Co., J. O.	68	MOTOR TRUCKS.	
BUCKETS (Elevator).		B. E. Sturtevant Co.	69	Packard Motor Car Co.	—
Hendrick Mfg. Co.	10	DYES, ANILINE.		OILS AND GREASE.	
BUNDLING MACHINES.		Heller & Merz	13	Vacuum Oil Co.	—
Hudson Sharp Machine Co.	—	National Aniline & Chemical Co.	—	PACKING.	
CALENDER ROLLS.		White Tar Aniline Corporation, The	4	Jenkins Bros.	—
Appleton Machine Co., The	31	DYE STUFFS.		PAPER BAG MACHINERY.	
Farral Foundry & Machine Co.	—	Du Pont de Nemours & Co., E. I.	—	Potdevin Machine Co.	7
Lohdell Car Wheel Co.	4	ENVELOPE MACHINES.		Smith & Winchester Mfg. Co.	10
Norwood Engineering Co.	66	Potdevin Machine Co.	7	PAPER BAG MANUFACTURERS.	
B. F. Perkins & Sons, Inc.	11	F. L. Smith Machine Co.	—	Lawrence Bag Co.	5
Textile Finishing Machinery Co.	—	FAN AND BLOWING SYSTEMS.		Schorach & Co.	63
CARBON TOOLS.		B. F. Sturtevant Co.	69	PAPER BOX BOARDS.	
Thomas L. Dickinson	70	FAN PUMPS.		C. L. La Boiteaux Co.	—
CASEIN.		Valley Iron Works	—	PAPER CORES.	
Casein Mfg. Co.	3	FELTS AND JACKETS.		Elixman Paper Core Co.	—
CENTRIFUGAL PUMPS.		Alhany Felt Co.	—	PAPER CUTTERS.	
Valley Iron Works	—	Appleton Woolen Mills	8	Hamblet Machine Co.	—
CHAIN.		Bulkley, Danton & Co.	67		
Jeffrey Mfg. Co.	—	Draper Bros. Co.	67		
CHEMICALS, COLORS, ETC.		Fitchburg Duck Mills	—		
Arnold Hoffman & Co., Inc.	—	F. C. Huyck & Son	11		

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CLASSIFIED INDEX TO ADVERTISEMENTS

PAPER DEALERS.		Page			Page	STITCHING MACHINERY.		Page
Armstrong Paper Co.		61	Manhattan Perforated Metal Co.		57	Saranac Machine Co.		—
E. F. Hammond		Front Cover	Charles Mundi & Sons		—	STOCK REGULATORS.		—
PAPER EXPORTERS.		—	PIPE (Genuine Wrought Iron).		—	Trimble Machine Works		—
Hudson Trading Co.		2	A. M. Myers		—	STRAW MAKING.		—
Katzenstein & Keene, Inc.		4	Reading Iron Co.		—	Samuel M. Langston Co.		70
Parsons Trading Co.		Front Cover	PRESS ROLLS.		—	SUCTION BOX COVERS.		—
PAPER MANUFACTURERS.		—	Rodney Hunt Machine Co.		53	Venasha Wood Split Pulley Co.		—
Bayless Mfg. Co.		63	PLUGS.		—	SULPHITE, BLEACHED AND UNBLEACHED.		—
Becker Paper Corporation		5	Menasha Wood Split Pulley Co.		—	J. Anderson & Co.		4
Brown Company		5	PLUGS (Wood).		—	The Borregaard Co., Inc.		9
Collins Mfg. Co.		6	O. L. Bartlett		—	Brown Co.		5
Diamond State Fiber Co.		Front Cover	PULP STONES.		—	Bulkley, Dunton & Co.		14
Eastern Mfg. Co.		71	International Pulp Stone Co.		Front Cover	Butterworth & Co., Inc., E.		69
Eaton Dickman Co.		12	Lombard & Co.		67	Canadian Robert Dollar Co.		61
Fort Howard Paper Co.		5	PUMPS.		—	Columbian Paper Co., Inc.		67
Franklin Paper Co.		—	Frederick Iron & Steel Co.		7	Craig Becker Co., Inc.		3
Hammermill Paper Co.		—	Haydon Pump & Blower Co.		—	Eastern Manufacturing Co.		71
Hanna Paper Corporation		6	Hudson Sharp Machine Co.		—	Maid Sales Co., The.		—
Howard Paper Co.		55	PUMPS (Vacuum).		—	Price & Pierce, Ltd.		Front Cover
Massachusetts Pulp & Paper Co.		66	The Nash Engineering Co.		29	Pulp & Paper Trading Co.		67
Mountain Mill Paper Co.		55	PRESSURE BULKERS.		—	SULPHUR.		—
St. Regis Paper Co.		6	B. F. Perkins & Sons, Inc.		11	Texas Gulf Sulphur Co.		6
Sherman Paper Co.		69	RAG CUTTERS.		—	Union Sulphur Co.		57
Stratford Paper Co.		69	B. F. Perkins & Sons, Inc.		11	TANKS (Water, Oil, etc.).		—
Wausau Sulphate Fiber Co.		9	Taylor, Stiles & Co.		—	Biggy Boiler Works Co.		—
West Virginia Pulp & Paper Co.		55	RECORDING INSTRUMENTS.		—	W. E. Caldwell Co.		7
PAPER AND PULP MACHINERY.		—	Bristol Co.		—	New England Tank & Tower Co.		75
Appleton Machine Co.		31	RECORDING TACHOMETERS.		—	Searns Lumber Co., A. T.		2
Bagley & Sewell Co.		—	Bristol Co.		—	Tokheim Oil Tank & Pump Co.		—
Baker Mfg. Co.		74	ROLL GRINDERS.		—	Woolford Wood Tank Co.		—
Belt Iron Works		27	Iobdell Car Wheel Co.		4	TEMPERATURE RECORDING.		—
Bird Machine Works		25	ROSIN.		—	Bristol Co.		—
Black-Clawson Co.		—	Hercules Powder Co.		3	TIMBER ESTIMATES.		—
Clark-Aiken Co.		11	ROSIN SIZE.		—	The Bradley Sales Agency		68
Frank H. Davis		65	Arabul Mfg. Co.		75	James W. Sewall		68
Downtown Mfg. Co.		74	Paper Makers Chemical Co.		57	TIME RECORDS.		—
Glens Falls Machine Works		29	Western Paper Makers Chemical Co.		57	Bristol Co.		—
Hudson-Sharp Machine Co.		—	ROTARY BLEACHING BOILERS.		—	TRANSMISSION MACHINERY.		—
Improved Paper Machinery		13	Biggs Boiler Works Co.		—	H. W. Caldwell Co.		9
Sandy Hill Iron & Brass Co.		10	SAVEALLS.		—	Hill Clutch Co.		—
Shurtle Bros. Machine Co.		65 and 66	Bird Machine Co.		25	Reeves Pulley Co.		—
Smith & Winchester Mfg. Co.		8	SATIN WHITE.		—	Weller Mfg. Co.		—
Trimble Machine Works		—	The Kalbfleisch Corp.		40	TURPENTINE.		—
Valley Iron Works		—	Paper Makers Chemical Co.		57	Hercules Powder Co.		—
Waterville Iron Works		—	Western Paper Makers Chemical Co.		57	TWINES.		—
PAPER MILL AGENTS.		—	SCALES (Paper).		—	American Manufacturing Co.		31
Dillon & Barnes		70	Fred Baker		—	VALVES.		—
McIver, Dana T.		2	E. J. Cady & Co.		—	Crane Co.		70
PAPER AND PULP MILL BROKERS.		—	Foreign Paper Mills, Inc.		3	Jenkins Bros.		4
Gibbs Brower Co.		66	SCREENS.		—	VAPOR ABSORPTION SYSTEMS.		—
PAPER SPECIALIST.		—	Beloit Iron Works		27	Ross Engineering Co.		68
Charles W. Bell		—	Bird Machine Co.		25	VENTILATING FANS.		—
PAPER STOCK.		—	Central Mfg. Co.		—	B. F. Perkins & Sons, Inc.		68
Atterbury Bros.		Front Cover	Wm. A. Hardy & Sons Co.		57	ROSS ENGINEERING CO.		—
Butterworth & Co., Inc., E.		69	Union Screen Plate Co.		73	VEGETABLE PARCHMENT PAPERS.		—
Castle, Gotthel & Overton		75	SHREDDERS (Pulp and Paper).		—	Kalamazoo Vegetable Parchment Co.		55
Gumbinsky Bros.		76	Valley Iron Works		—	WAX PAPERS.		—
Hicks, Daniel M.		69	SKYLIGHTS.		—	Lindsay Bros., Inc.		63
Mendelson Bros. Paper Stock Co.		69	F. Van Noorden & Co.		75	WOOD FLOUR.		—
Penn Paper & Stock Co.		69	SLASHERS.		—	Union Wood Flour Co.		69
Salomon Bros. & Co.		69	Rath & Pringle Co.		—	WOOD PULP IMPORTERS.		—
Traut-Smith Co.		Front Cover	SLITTERS AND REWINDERS.		—	American Wood Pulp Corp.		53
PAPER TESTERS.		—	Beloit Iron Works		27	J. Andersen & Co.		4
Ashcroft Mfg. Co.		67	C. Benninghofen & Sons		68	Ira L. Berbe & Co.		12
E. J. Cady Co.		—	Cameron Machine Works		70	The Borregaard Co., Inc.		9
Foreign Paper Mills, Inc.		3	Dietz Machine Works		10	Bulkley, Dunton & Co.		—
B. F. Perkins & Sons, Inc.		11	Grisinger Machine Works		67	M. Gottesman & Co.		—
Thwing Instrument Co.		—	Hudson-Sharp Machine Co.		—	Hammond, R. F.		Front Cover
PAPER TUBE MACHINERY.		—	Samuel M. Langston Co.		70	F. J. Keller Company		12
Dietz Machine Works		10	SPlicing TISSUES.		—	Laserloef Trading Co.		12
Grisinger Machine Works		67	E. M. Sargeant Co.		12	Mend Sales Co., The		—
PAPER WAXING MACHINERY.		—	SPRUCE LOGS.		—	Nilsen, Lyon & Co., Inc.		35
Farrel Foundry & Machine Co.		—	Royal Trust Co.		61	A. J. Parel & Co., Inc.		19
Potdevin Machine Co.		7	STARCH.		—	J. F. Patton & Co., Inc.		8
PAPER WAXING MACHINES.		—	Corn Products Refining Co.		6	Perkins Goodwin Co.		35
Dietz Machine Works		10	STEAM SPECIALTIES.		—	Scandinavian American Trading Company		—
PERFORATING METAL.		—	Cline Co.		70	WOOD ROLLS.		—
Harrington & King Perforating Co.		63	Onan Coil Heater & Purifier Co.		—	Rodney Hunt Machine Co.		53
Hendrick Mfg. Co.		10			—			—

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